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ADJUSTMENT PROFILES AMONG YOUTH IN DIVERSE CULTURAL CONTEXTS: INDIVIDUAL, FAMILY, AND CONTEXTUAL INFLUENCES

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ADJUSTMENT PROFILES AMONG YOUTH IN DIVERSE CULTURAL CONTEXTS: INDIVIDUAL, FAMILY, AND CONTEXTUAL INFLUENCES

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

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Abstract

Adjustment Profiles Among Youth In Diverse Cultural Contexts: Individual, Family, And Contextual Influences

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Recent literature has noted that not all youth who experience adverse circumstances (e.g. poverty, exposure to violence, maltreatment) end up displaying expected unfavorable outcomes (e.g. academic failure, depression, drug dependence); in fact, some youth display "resilience," broadly understood as adaptive functioning in the face of adversity (Luthar, Cicchetti, & Becker, 2000). Overall, research on resilience has offered a new approach to the study of at-risk populations, emphasizing the study of strengths, processes, and mechanisms among individuals and communities that may favor positive adaptation, rather than emphasizing deficits among those experiencing adversity (Schoon, 2012). Although resilience research has come a long way, the importance of cultural processes in resilience only recently has been considered, there is still a dearth of studies among diverse contexts and cultural groups (Betancourt et al., 2011), and there is a lack of prospective analyses examining the stability of resilience over time (O'Dougherty et al., 2015). The present study examined the existence of profiles of adjustment among youth who had experienced some kind of adversity in three contexts: (1) Medellin, Colombia (n = 967); (2) Guatemala (n = 2.470); and (3) Chicago, USA (n=491), as well as protective factors associated with profile classification. Furthermore, the continuity of profiles

over time was examined in the Chicago sample. Results showed that for each context, diverse profiles of adjustment emerge in the presence of adversity. For all contexts some youth were classified as either resilient (defined as scoring 1 *SD* above or below the mean on selected indicators) or as holding steady (scoring above the mean but less than 1 *SD*). Profiles exhibiting high levels of internalizing symptoms, externalizing problems, or problems across domains also were identified across contexts. Protective factors at the individual (e.g. sex, intelligence, prosocial behavior) and at the contextual (e.g. family cohesion, prosocial peers, positive relationship with teacher) levels proved relevant for profile classification, with some factors being relevant in one context but not in another. Prospective analyses revealed both continuity and discontinuity in profile classification among youth in Chicago, with some youth remaining classified in the same group across time points, whereas others transitioned between groups. These results highlight the importance of studying resilience in context, given that what constitutes a salient protective factor for some youth may not be relevant for others. Moreover, these results show that as youth negotiate developmental tasks within their ecologies, there is potential for both continuity and discontinuity in resilience processes. The results can inform prevention and intervention efforts aiming to work from a strength based approach.

Adjustment Profiles Among Youth In Diverse Cultural Contexts: Individual, Family, And Contextual Influences

Adolescence is a time of life when rapid physiological changes are occurring and new demands are made for psychosocial adjustment (Deng & Roosa, 2007). During this life stage various crises of development and problems including unemployment, depression, delinquency and drug use (Conger & Donnellan, 2007) begin or occur for the first time for many individuals. Most teens can handle the stress that comes with this stage of life, though others do struggle to cope healthily. For the past two decades the disproportionate growth in youth alcohol and drug related problems, as well as their engagement in violent behavior, has brought attention to the importance of considering contextual, familial and individual factors particularly relevant to the etiology and development of said problem behaviors; risks factors have been identified and it is well known that facing adverse circumstances (e.g. poverty, exposure to violence, war, maltreatment, and other stressors) place youth at a higher risk for poor adjustment and problem behaviors (Fowler, Tompsett, Braciszewski, Jacques-Tiura, & Baltes, 2009; Hardaway, Larkby, & Cornelius, 2014; McGloin & Widom, 2001).

Despite the fact that youth may be placed at risk by their social ecologies, the families and communities in which they live also may provide opportunities. Research shows that protective factors can buffer the effect of risk factors and promote positive outcomes (Fergus & Zimmerman, 2005; Fergusson & Horwood, 2003; Gardner, Dishion, & Connell, 2008). Indeed, recent literature has noted that not all youth who experience adverse circumstances end up displaying expected unfavorable outcomes (e.g. academic failure, depression, drug dependence); in fact, some youth manage to function well in multiple domains despite living in contexts

characterized by adversity, displaying "resilience," which is broadly understood as adaptive functioning in the face of adversity (Luthar, Cicchetti, & Becker, 2000; Masten, 2007).

The ability to adapt in the face of adversity is believed to be key for the successful development of youth exposed to chronic adversity or who experienced an acute traumatic event. Therefore, an increasing interest in how to promote positive development in the face of adversity has been noticed among researchers, family professionals and policymakers, and the significance of resilience research for promoting positive youth development is now widely acknowledged (Ager, 2013). Research on resilience has blossomed over the past three decades, and as researchers have accumulated empirical and theoretical knowledge, they have undergone significant changes in their conceptualization and methodological approaches to this topic. Progressively, researchers have given more attention to contextual influences and processes (Wright, Masten, & Narayan, 2013). Thus, resilience researchers recognize the importance of the complex transactions that take place between individuals and their environments leading to an ecological approach to the study of resilience. For instance, Ungar (2012) states that the quality of an individual's physical and social ecology contributes to the resilience process as much if not more than individual characteristics. This is important because it allows researchers to consider the resilience process at different micro and macro levels of an individual's ecology, which may better inform prevention and intervention efforts.

Equally important is the effort that resilience researchers are making to give more attention to positive aspects of adaptation and what this may mean in different social and cultural contexts (Bradley, Davis, Kaye, & Wingo, 2014; Clauss-Ehlers, 2008; Panter-Brick & Eggerman, 2012; Ungar, 2012). For instance, Diers (2013) argues that rather than being seen as a negative issue and described in terms of deficits, adolescents should be seen as a population with

the potential to be assets and agents of change for their communities, with the use of well- being indicators that take into account the context of development being an increasing need. Similarly, Roth & Brooks-Gunn (2000) reported how in the United States the general public opinion towards adolescents is not favorable. The authors explained how overall youth are viewed as liabilities for their communities which constitute a missed opportunity to recognize their potential value as assets. Resilience researchers can better inform the public about what positive adjustment constitutes, and how different transactions between youth and their ecologies impact their ability to withstand adversity at any given time.

The Transactional and Ecological Models of Human Development

Understanding the complexity of human development is one of the pivotal goals of developmental science. Over time, multiple theories and models have emerged in order to account for changes and continuity in developmental trajectories across the life span. The transactional and ecological models of human development proposed by Sameroff (2009) and Bronfenbrenner (1986) have gained increased recognition and acceptance over the past decades due to the attention devoted to the, and to the acknowledgment of the bidirectional, interdependent influence between individuals and their environment.

According to these models, development is dynamic and constantly influenced by transactional processes between individuals and the settings in which they live their lives. For instance, Sameroff (2009) states that in addition to biological factors, elements related to individual characteristics and the environment play an important role in development. These three components interact and influence each other in a dynamic form where people impact their environment as much as the environment impacts them (Sameroff, 2009). Thus, at the core of the transactional model is the emphasis placed on the bidirectional, interdependent influence of the person and environment, and the fact that individuals are not passive recipients of these

contextual influences. Furthermore, different environmental settings affect and are affected by each other, so environmental settings also are changing and being changed by their participants.

Bronfenbrenner's bioecological approach to development also stresses person – context interrelatedness. Bronfenbrenner (1986) states that human development is shaped through complex transactions that take place between an individual and his/her environment, where the individual is an active agent whom interacts and changes the environment, contributing, in that way, to his/ her own development. In addition, Bronfenbrenner embraced both "nature" and "nurture" in his understanding of human development, posing that a complex web of influence from both sources are responsible for how a person develops. Thus, there is room to consider biological, individual, familial, contextual, and socio –cultural factors that may be impacting developmental processes (Tudge, Mokrova, Hatfield, & Karnik, 2009).

Contextual influences on development

As explained by the transactional and ecological models, a person's development cannot be appropriately studied without considering how that person is enmeshed within a rich social and cultural context. This context includes not only the immediate family milieu, but also social structures such as institutions, community groups, governments, economies and laws. Together, all of these constitute the contexts that define an individual's life space.

Bronfenbrenner (1986) offers a good integrative framework from where to consider the important role of the environment as a context of development. He explained than there are multiple layers with the potential to impact an individual's development. Some of these layers are more proximal to the individual than others, but all of them are somewhat present through the life experiences that shape a person's development. The author proposes four levels of organization for context ranging from biological to cultural and historical, as well as mutually

influential relations among these levels. The microsystem refers to the immediate developmental setting in which the individual lives (e.g. family, school, peer group); parents, caregivers, peers, and teachers all are influences that are part of the microsystem. The mesosystem refer to interactions between differing microsystems such as families and schools. The exosystem represents broader influences, including systems which have an indirect influence on the individual through its impact on the mesosystem and microsystem. The macrosystem includes more distal contextual influences like value systems, policies, laws, institutions and cultural beliefs. Therefore, besides highlighting the effects of immediate settings, such as family, neighborhood and school, Bronfenbrenner underscores the influence of larger social structures. Furthermore, in addition to the microsystems, mesosystems, ecosystems and macrosystems, Bronfenbrenner introduced the concept of the chronosystem to underscore the fact that an individual's development occurs within the context of time. Bronfenbrenner and Morris (2006) proposed a dynamic relation among four components: characteristics of the person, characteristics of the context, processes referring to interactions between the individual and the environment, and time that allows for interactions to occur on a regular basis, but also refers to the historical period in which the person lives.

The transactional and ecological models of human development are considered relevant theories that inform resilience research (Masten, 2014), as they both focus on the relationship between individuals and the settings in which they live their lives. This offers a contextual perspective to the study of resilience, and both approaches emphasize the interconnectedness of the different settings that influence development. Therefore, because the various levels are related to one another, it is important to understand that a change in one part of the system affects other parts of the system. For instance, a parent's loss of a job (involving the

mesosystem) has an impact on a child's microsystem, impacting the parent's ability to provide for the child and even his/ her ability to engage in positive parenting. These models can be seen as complementary, as they are informed by both transactional and ecological models of development. Cicchetti and Lynch (1993) proposed an ecological-transactional model of community violence and child maltreatment, in which the authors provided evidence of how multiple levels of children's ecologies influenced each other, which in turn influenced children's development.

At this point, it is important to highlight that although a wealth of research indicates the impact of context and culture on human development (Ungar, 2012) which lead to a better understanding of process underlying development and how complex combinations of biological and environmental events shape development, increased attention to the role of context and culture on resilience processes is still needed (Theron, Liebenberg, & Ungar, 2015). This idea is revisited later in this chapter.

Proximal/Distal Influences on Development

As discussed above, contextual influences on development are not limited to those from the individual's immediate environment (e.g. family and school), but include broader sociocultural factors like economic conditions, cultural values and public policies. The transactional and ecological models consider proximal and distal influences as part of a complex, multilevel system. Similarly, Wachs (2000) claims that the explanation of complex developmental outcomes requires the consideration of proximal and distal environmental influences. According to the author, proximal environmental influences are "specific social, physical, or symbolic contextual characteristics that directly impinge on the child." (p. 125). Whereas distal environmental influences refer to "cultural and subcultural characteristics,

societal institutions, societal disruptions, place of residence, social class, and parental work situation or social support networks." (p. 153).

The understanding of proximal and distal influences provides a framework for examining broader system influences on an individual's development within the context of their families, schools and communities simultaneously. Hence, both proximal and distal influences must be considered when studying developmental variability, since individual differences in reaction to the proximal and distal influences may be observed, and not all outcomes are equally affected by these influences (Wachs, 2000). It is also important to consider that proximal environmental influences act to mediate and/or moderate distal environmental influences. For instance, distal influences, such as those in the neighborhood, are filtered through the more proximal environments of the family and the peer group.

Summary

This section has provided a discussion of two models of human development: transactional (Sameroff, 2009) and bioecological (Bronfenbrenner, 1986). Both models provide a framework for the understanding of how human development takes place through complex reciprocal transactions between individuals and different levels of their ecology. Thus development is seemed as dynamic and constantly influenced by contextual factors. The interconnectedness of different settings on an individual's ecology was discussed, as well as proximal and distal influences.

Because of the complexity of the individual – context transactions, and due to the myriad variables present at each level of the individual's ecology, it is important to understand how proximal and distal influences constitute protective and risk factors for individual development.

Therefore, the following section of this introduction provides an overview of known risk and protective factors for developmental outcomes.

Risk and Protective Factors

Over the years, different disciplines such as sociology, psychology and social work, had contributed to establish a large body of literature concerning risk and protective factors with the potential to impact individual adjustment at different stages of life. By now it is well known that both risk and protective factors are probabilistic (Masten & Powell, 2003); that they extend across the multiple levels of an individual's ecology from the immediate family context to the macro societal level (Masten, 2014), and that interactive processes between risk and protective factors happen over time (Fergus & Zimmerman, 2005).

According to Masten and Gamezy (1985) protective factors relate to a lower likelihood of an adverse event, and risk factors refer to adversities individuals experience which pose a threat to positive development (Masten & Powell, 2003). Sameroff and Rosenblum, (2006) defined risk factors as the "variables that increase the incidence of nonoptimal development." (p. 118) Other variables that the authors identified as environmental risks are: History of maternal mental illness, rigid parental attitudes, low positive maternal interactions, low parental education, single parenthood and stressful life events. When it comes to protective factors, the presence of supportive parents and teachers, prosocial peers, achievement motivation, impulse control and social opportunities have been identified as beneficial for individual development (Eisenberg, Hofer, & Vaughan, 2007; Laible, Carlo, & Raffaelli, 2000; Masten, 2014). The effects of risk and protective factors across different domains have been examined in a plethora of studies. Table 1 provides a summary of selected widely recognized factors that increase the probability of

negative outcomes (risk factors) as well as factors believed to counterbalance this probability (protective factors).

In addition to the aforementioned, it is important to recognize that risk and protective factors can be present at each level of an individual's ecology (Cicchetti & Lynch, 1993; Lynch & Cicchetti, 1998). For instance, Masten (2013) explains how some risk factors may be related to characteristics of the individual (e.g. gender) or to sociodemographic factors (e.g. poverty, ethnicity), or they could be related to characteristics of the individual relations (e.g. conflicted) and life experiences (e.g. abuse, parental divorce). Similarly, protective factors also may exist within an individual (e.g. self-regulation skills) or in an individual's environment (e.g. quality of parenting). Hence, Table 1 presents risk and protective factors as either proximal or distal to the individual.

Risk, Resilience and Protective Factors

As stated early on, youth live in environments that provide opportunities and constraints; the deleterious effects of poverty, risk factors and their impact on youth development have gained increasing attention among prevention researchers, family professionals and policymakers. However, it is also known that not all youth exposed to adversity develop behavioral or mental health problems (Bradley, Davis, Kaye, and Wingo, 2014), and this constitutes one of the key interests of resilience research. Cicchetti (2010) suggested that the different ways in which individuals interact with risk and protective factors at each level of their ecologies allows for diversity in their patterns of adaptation. Moreover, some factors may be more critical for certain outcomes. Developmental timing must be considered, since the damaging effects of risk factors as well as the buffering role of protective factors may differ

depending of the time of exposure (Masten, 2014). This is important when considering windows of opportunity for prevention and intervention.

When we take into consideration the interconnectedness between different developmental stages it seems obvious that what has an impact in a stage of life may continue having an influence later on; it is a cumulative effect that carries on from one stage to another. For instance, risk factors frequently accumulate in an individual's life (Masten, 2014), and research shows that exposure to multiple risk factors leads to worse developmental outcomes than exposure to single risk factors (Evans, Li, and Whipple, 2013). Cumulative risk can be defined as the sum in time of multiple risk factors or the total effect of multiple risk factors (Masten, 2013). As an example of cumulative risk Wachs (2000) states that there may be little impact of neighborhood violence on the individual's behavior until such influences accrue past a critical threshold point. However, we know that the individual is not a passive recipient of his/her experiences and that the transactional process between personal characteristics and environmental factors can also change the course of a developmental trajectory. As explained by Ferraro, Shippee, and Schafer (2009), all risk and protective factors, individual characteristics and available resources play an important role in shaping life course trajectories. For instance, turning points in a person's life can modify expected consequences of a life filled with adversity, as can the person's resourcefulness and even the person's perception of his/her circumstances and their ability to function in the face of adversity.

Masten and Obradovic (2006) explained how certain "adaptive systems" that rely mostly on self –regulatory capacities play an important role in development, influencing an individual's ability to adapt in the face of adversity. Hence, when these fundamental adaptive systems do not

Table 1

Selected Risk and Protective Factors Associated with Developmental Outcomes

	Proximal Contextual Influences		
	Protective Factors	Known effects	Supportive evidence
Individual	Problem solving skills / high IQ Self-regulation skills Social Competence	Overall better adjustment Impulse control Resistance to negative peer influence	(Masten, Burt, & Coatsworth, 2006) (Masten and Powell, 2003) (Eisenberg, Hofer, & Vaughan, 2007) (Gardner, Dishion, & Connell, 2008)
	High quality relationship with parents	Better adjustment (i.e., least aggressive and depressed, most sympathetic)	(Laible, Carlo, & Raffaelli, 2000) (Masten & Tellegen, 2012)
Family	Kinship social support	Mitigate internalizing and externalizing problems	(Taylor, 2010)
Peer Group	Prosocial peer group	Increased engagement in prosocial behavior	(Choukas-Bradley, Giletta, Cohen & Prinstein, 2015)
School			(Bernat, 2009)
	Positive teacher-student relationship	Academic self-regulation Higher optimisms and self-efficacy	(Raufelder, Hoferichter, Schneeweiss, & Wood, 2015)
	Risk Factors	Known effects	Supportive evidence
Individual	Psychological dysregulation	Poor impulse control, violent behavior, poor execution of goal-directed plans	(Mezzich et al., 1997)
Family	Harsh and punitive parenting Maternal Depression	Disruptive behaviors	(Gross, Shaw, Burwell, & Nagin, 2009)
Peer Group	Deviant peer group	Increased engagement in deviant behaviors	(Brechwald and Prinstein, 2011)
School	Teacher burnout	Decreased student's motivation	(Shen et al., 2015)

Table 1

Selected Risk and Protective Factors Associated with Developmental Outcomes

Distal Contextual Influences			
	Protective Factors	Known effects	Supportive evidence
Neighborhood	Neighborhood Control	Lower rates of adolescent delinquency.	(Sampson, Morenoff, & Gannon –Rowley, 2002)
	Neighborhood cohesion	Buffer the effects of exposure to violence on overall adjustment	(Chen, Howard, & Brooks –Gunn, 2011)
Sociocultural system	Involvement in community and extra-curricular activities	Overall better adjustment Academic performance Less involvement in risky behaviors	(Eccles & Barber, 1999) (Francois, Overstreet, & Cunningham, 2012) (Fredricks & Eccles, 2006) (McHale et al., 2012)
	Religiosity	Lower daily cortisol levels Psychological adjustment	(Crawford, Wright, & Masten, 2006) (Milevsky, & Levitt, 2004) Luthar (2006)
	Risk Factors	Known effects	Supportive evidence
Neighborhood	Exposure to community violence	Lower academic achievement Aggressive behavior Anxious/depressed symptoms Delinquent behavior	(Boney-McCoy & Finkelhor, 1995) (Bradshaw, Rodgers, Ghandour, & Garbarino, 2009) (Fowler, Tompsett, Braciszewski, Jacques-Tiura, & Baltes, 2009), (Hardaway, Larkby, & Cornelius, 2014)
Sociocultural system	Racial discrimination	Internalizing and externalizing problems.	(Riina, Martin, Gardner, & Brooks-Gunn, 2013)
	Poverty	Higher rates of externalizing and internalizing symptoms. Lower rates of school completion	(Brooks-Gunn & Duncan, 1997) (Li, Nussbaum, & Richards, 2007) (Felner et al., 1995)

operate in an optimal way, threats to functional development transpire. Attachment system - which includes close relationships with caregivers, romantic partners and friends - is one of the adaptive systems proposed, and represents a protective factor that contributes to a functional adaptation of individuals facing adversity (Masten, Obradovic, 2006). In addition, Masten (2013) described individual agency and mastery motivation - an individual's learning capabilities and intelligence, self- regulation and sociocultural systems (e.g. religion) - as other adaptive systems that promote positive development and competence in multiple domains. The author places great emphasis on the importance of these dynamic interdependent systems to promote resilience, claiming that the main threat that adversity poses to an individual's development is its potential to damage said systems (Masten, 2001). Similarly, Ungar, Ghazinour, and Richter (2013) state that a series of reciprocating systems favor children's adaptation to adversity; a powerful identity, a sense of cohesion, belonging and spirituality, and relationships are examples of said systems. The authors also claim that when these adaptive systems do not operate in an optimal way threats to functional development transpire. Hence, the importance to attend to the role of protective factors in youth adjustment.

In a recent study exploring the role of developmental assets in building emotional resilience among youth exposed to community violence, Jain et al. (2012) stated that more research is needed regarding the relevance of protective factors for high risk youth. The authors explained how despite a wide range of support available for the relation between protective factors and developmental outcomes, few studies have examined said relation among youth at high risk. Moreover, resilience researchers have stated that protective factors can be stronger predictors of positive development than risk factors are to negative outcomes (Rutter, 1985; Werner & Smith, 2001).

Summary

The current section provided a discussion of risk and protective factors and how they interact to either deter or promote positive adjustment. Risk factors refer to adversities individuals experience which pose a threat to positive development. Protective factors, on the other hand, have been understood as the characteristics and/or circumstances that can buffer the impact of negative events and or chronic disadvantages. Together these elements play an important role in development, and their interplay at different levels of an individual's ecology constitute a key point of interest for resilience research. The understanding of the contribution of protective factors to resilience process among high risk youth is a needed area of research given the deficit approach that has prevailed in the literature.

Following the review of risk and protective factors, and their relation with resilience research, the next section examines the construct of resilience, approaches to its study, and current directions for research.

Resilience Framework

Research on resilience spans over five decades, that according to Wright, Masten and Narayan (2013) can be represented in four waves of resilience research. The first wave focused on the description of resilience correlates and multiple studies consistently reported high self-efficacy, problem solving skills, effective parenting, close relations with adults, and support of a religious community (among others) as important variables for the understanding of resilience. The second wave focused on the process whereby resilience correlates operate. The third wave of resilience research gave more attention to the development and evaluation of interventions to promote resilience. Lastly, in the fourth wave, advances in neurological assessments and statistical models allowed resilience research to embrace more complex questions, examining

resilience processes at multiple levels of analyses from very specific characteristics of the individual to broader elements in the environment, examining interactions across levels and assessing changes over time (Bonanno and Diminich , 2013; Masten, 2013). Despite an evolution of resilience research, how individuals withstand adversity, and why people under similar risk conditions do not experience similar negative effects has remained the main focus of interest. The quest for a comprehensive definition of resilience has engaged researchers and practitioners in lasting debates.

The Dynamic Construct of Resilience

Luthar, Cicchetti, and Becker, (2000) reported discrepancies in the literature regarding the conceptualization of resilience as a personal trait versus a dynamic process. The authors described how early on in resilience research it was believed that qualities within the individual like autonomy and high self-esteem were the main factors that could help children to bounce back from adversity. As time passed researchers moved to believe that factors external to the child played a relevant role in the development of resilience. Consequently, elements related to the children, their families, and their environments were considered important for the processes underlying resilience. Luthar, Cicchetti and Becker (2000) explained how resilience has been defined in a variety of ways, and after a detailed review of the resilience literature the authors claimed how, despite the wide range of definitions available, in general resilience could be understood as the process by which, when facing adversity, some individuals are able to achieve a "positive adaptation" (Luthar, Cicchetti, and Becker, 2000). The authors described resilience as a "dynamic process" where individuals whom have experienced adverse and risky situations are able to bounce back and meet the expected developmental milestones consistent with a positive adaptation. This definition implies two conditions by which an individual could be considered

resilient: first, there has been exposure to significant adversity; and second, an achievement of positive adaptation has been reached, despite the exposure to risk.

At the same time, Sroufe, Egeland, Carlson, and Collins, (2005) explain how resilience, rather than a personal trait or a developmental process, is a feature of a developmental system that can be observed over time. This is also what according to Sroufe et al. (2005) marks the differentiation between competence and resilience; competence is a piece of functioning at a particular time, while resilience involves a developmental process over time. Likewise, Panter-Brick, and Leckman (2013) also highlighted how resilience is a process that unfolds over the course of development, and according to the authors, issues of timing, processes and context are fundamental for resilience research. Thus, it is important to examine pathways of risk and resilience prospectively and to consider the fact that resilience pathways may be context specific. Lastly, in their cautionary notes Masten and Obradovic (2006) emphasize the variety of pathways to resilience, the role of cultural developmental and historical context and how one must avoid making the mistake of blaming the "victim" when resilience does not occur, which can easily happen if one assumes that resilience is due only to an individual's internal capacities. The context throughout the interaction of risk and protective factors also plays a determinant role in the occurrence of resilience.

Indeed, recent literature has noted that not all children or youth who experience adverse circumstances end up displaying the unfavorable outcomes described above; in fact, some displayed "resilience," which can also be broadly understood as adaptive functioning in the face of adversity (Masten, 2007). It is noteworthy that "adaptive functioning" refers not only to characteristics of the individual, but also processes and interactions from a wider social context including family and community (Schoon, 2012). Thus, as stated by Wright, Masten and

Narayan (2013), rather than being considered as a stable given trait or characteristic that some people have and others lack, the concept of resilience can be better understood as a process where transactions between the individual and the environment are in constant interplay. Wright, Masten and Narayan (2013) also described how two judgments are needed when describing resilience processes; first, one needs to establish a threat to adaptation, usually conceptualized by risk, adversity and stressful life events (O'Dougherty, Wright, & Masten, 2015), then positive adaption must be determined, which is usually conceptualized as success in developmental tasks, relational competence, subjective well-being and/or absence or psychopathology (O'Dougherty, Wright, & Masten, 2015). Therefore, resilience can also be understood as an inferential concept, which has led to some criticisms regarding potential bias when determining the criteria for these judgments (Masten, 2013).

Adaptive functioning in the face of adversity: achieving developmental tasks

Resilience researchers have used developmental tasks to define positive adaptation and functioning when facing adversity (Masten & Coatsworth, 1998; Masten & Powell, 2003). McCormick, Kuo, and Masten (2011) explain how at any given age/stage in life an individual faces multiple developmental tasks across various domains that may serve as indicators of adaptation and competence. McCormick, Kuo, and Masten (2011) define developmental tasks as "the behavioral criteria for judging how well a person is doing in life." (p. 117) Cultural and societal expectations influence this criteria. These expectations are present across the life span; for instance it is expected that a toddler will walk and begin to talk, that a young child will behave appropriately at school and get along with peers, that adolescents will prepare for adult roles in their societies which may include obeying the law, adjusting to physical changes, and performing well at school, and that older adults will adapt to declining health and changes in

work and family responsibilities (McCormick, Kuo, & Masten, 2011). Because of these expectations, developmental tasks include multiple domains of behavior. Additionally, some developmental tasks are expected across cultures and thus are considered universal (e.g. learning to talk) while others, like school achievement, although common, are not expected across all cultures and therefore are not considered universal. On the other hand, some developmental tasks can be particular to a specific culture and/or context (e.g. coping with acculturation Coll et al., 1996). Nonetheless, both universal and culturally/contextually-specific developmental tasks are used to judge an individual's successful adaptation and competence within the expectations and values of their culture/context (Masten, 2014). Therefore, developmental tasks arise and change as a function of development in context reflecting societal and cultural values. Scholars also state that the success or failure in a given developmental task can set an individual on either a positive or a negative developmental pathway (McCormick, Kuo, & Masten, 2011; Masten, & Cicchetti, 2010). Certainly, success in developmental tasks in a given developmental stage constitute the basis for success in future developmental tasks displaying cascade effects over time (Masten et al., 2010; Roisman et al., 2004). Masten and Cicchetti (2010) refer to developmental cascades as the progressive effects that can be observed among domains of adaptive behavior over time.

A variety of adjustment profiles can be observed among individuals when considering how well they are doing across domains (McCormick, Kuo, & Masten , 2011). For instance, an adolescent may be judged as competent in a particular developmental tasks (e.g. ability to establish and maintain friendships) while judged as experiencing trouble in another (e.g. academic achievement). Brody et al. (2013), in their longitudinal study with 489 African American youth under conditions of high risk related to socioeconomic status, showed how despite the overall positive psychosocial adjustment, higher levels of allostatic load (e.g. high

blood pressure, high Body Mass Index BMI) were also present, exemplifying that resilience is not a total attribute present across all domains. Although criteria based on the absence of problems are commonly used in research to operationalize resilience (Masten, 2013), some research take into account adaptive functioning in some domains even in the presence of problems in other domains (Bradley, Davis, Kaye, & Wingo, 2014) which lead to considering different patterns of positive adaptation.

Approaches to the study of resilience

Masten (2013) noted the use of two basic approaches to the study of resilience: the variable-focused approach focused on the study of patterns of association between variables of interest, and the person-focused approach that attempts to classify individuals as resilient or not and then compares the groups on potential risk, protective and promotive factors. Person-focused approaches can also use longitudinal data to explore resilient pathways. In order to take advantage of the strengths of each approach some researchers include both approaches in their studies (Masten, 2011), and therefore it's important to note the distinction between these approaches.

Another important distinction to keep in mind in the study of resilience is differentiating experiences of chronic adversity versus experiences of an isolated traumatic event. For example, in order to differentiate trajectories of positive adjustment in response to chronic adversity versus single incident trauma, Bonanno and Diminich (2013) introduced the terms emergent resilience and minimal impact resilience. According to the authors emergent resilience refers to positive adjustment in the face of chronically adverse circumstances (e.g. poverty, civil war, parental bereavement) whereas minimal impact resilience pertains to positive adjustment in the face of acute life events understood as isolated stressors that occur in an otherwise normative

environment. This distinction is important when considering that chronic adversity is linked with more enduring changes over the life span, and the potential differences in the processes that might lead to resilience in the face of experiences of chronic adversity versus an isolated traumatic event.

Finally, of particular relevance for the present study, an additional point is made by Bonanno and Diminich (2013) regarding the grouping of different forms of resilience under one single term *resilient*. The authors explained how diagnostic approaches to describe individuals in binary terms as either presenting as problematic or not offers no information about the different types of resilient responses. This constitutes a missed opportunity for research as well as an important area of focus given the potential to inform prevention and intervention efforts.

Resilience in context

The importance to consider the interaction between individuals and their environments in the study of resilience processes has been amply stated (Masten & Garmezy, 1985; Ungar, 2008; Waller, 2001). For instance, Ungar, Ghazinour, and Richter (2013) explained how an ecological model of resilience facilitates the understanding of how proximal and distal factors contribute to positive development in the face of adversity, and how different contexts and cultures offer varied processes to promote resilience. The authors claim that resilience is the result of the multiple interactions between individuals and their social and physical ecologies; this multilevel perspective on resilience suggests that factors related to the family, school, neighborhood, community and cultural context each play an important role.

Current approaches regarding resilience adopt a framework reflecting interaction of multiple systems (Masten & Powell, 2003; Panter-Brick & Eggerman, 2012). For example, in their study with child soldiers exposed to civil war in Sierra Leona, Betancourt, Agnew-Blais,

Gilman, Williams, and Ellis (2010) underscore that resilience must be conceptualized from a socio ecological perspective; that is, this perspective must include family systems, social support, and community settings. Moreover, an increasing interest in the role that culture and context play in resilience process is evident (Masten, 2011; Ungar, 2012).

Resilience may vary as a result of contextual influences, and more research is needed to understand the processes that promote resilience. For example, it is possible that factors associated with increased risk of negative outcomes in one context are associated with resilience in other contexts (Bradley, Davis, Kaye, & Wingo, 2014). Likewise, factors that lead to resilience for a group of individuals may not be relevant for another. Differential susceptibility to environmental influences has been described by Belsky, Bakermans-Kranenburg, and van IJzendoorn (2007) who explained that individual differences can be observed in the susceptibility to the harmful effects of detrimental environments and also in responses to beneficial environments. According to the authors, individuals' genotypes interact with environmental characteristics that may potentiate or inhibit the expression of genetically based potentials. Their work constitutes an important contribution to the current line of study in resilience when considering the multilevel nature of an individual's ecologies.

Gaps in the literature and current directions in resilience research

Most of the literature to date has examined resilience in western societies and at the individual and family level, which constitutes an unfolding but incomplete body of research. For instance, there is still limited research regarding cultural factors related to resilience (Masten, 2013; Ungar, 2012). Furthermore, a deeper understanding of the factors related to resilience and how they operate is still needed. For example, resilience research can benefit from studying the role that protective factors play in the resilience process (Jain et al., 2012). Also, resilience

researchers increasingly are highlighting the importance of considering contextual influences beyond the immediate family setting (Betancourt, Meyers-Ohki, Charrow, & Hansen, 2013). Thus, analyses of factors related to the broader social and cultural settings in which individuals reside are needed (Bradley, Davis, Kaye, & Wingo, 2014; Clauss-Ehlers, 2008; Ungar, 2012).

As the world witnesses global adversity of different types, more work on resilience is emerging in response to natural disasters, war, and political violence, reflecting an interest in ways to promote resilience. Many of these adversities unfold in developing countries and have a great impact on youth. Diers (2013) describes how, in general, insufficient global attention has been given to adolescent health and development, with many efforts being focused on younger children. The author points out how almost one in five people worldwide is an adolescent; far from being an interest group, adolescents constitute a growing population particularly in regions like Asia and sub-Saharan Africa.

Lastly, Ungar, Ghazinour, & Richter (2013) state that beyond promoting an individual's ability to cope with adversity, consideration of broader societal dynamics is needed, and they advocate for promoting changes in the social and physical environments that jeopardize youth adjustment, aiming for policy and societal changes that guarantee environments conducive to positive development.

Summary

In the present section the shift in resilience research in terms of how it is conceptualized and studied was discussed. According to resilience scholars, resilience needs to be understood not just as an individual trait, but as a dynamic process where transactions between individuals and their environments are in constant interplay. The use of exposure to significant adversity, as well as achievement of positive adaptation as common criteria to operationalize resilience, was

also discussed, explaining how performance in expected developmental tasks for a particular life stage was the common way to define positive adaptation. Next, relevant topics to the study of resilience were described including the variable versus person-focused approach, the exposure to chronic adversity versus an isolated traumatic event, and the importance of considering diversity in resilience responses. Lastly, the role of context for the study of resilience was once again emphasized and gaps and current directions in resilience research were presented.

Following, the final section of this chapter briefly highlights the important role that continuity and discontinuity have for an individual's developmental trajectories and explains the need for the present study.

Continuity and Discontinuity in Development

One of the tenants of developmental science is that qualitative and quantitative change occur across an individual's life span (Lerner, Leonard, Fay, & Issac, 2011), and that changes in one domain of development impact and are impacted by other domains (Sroufe et al., 2005). However, as developmental researchers focus on individual changes during their lives, patterns of stability and continuity in people's lives also are considered. Certainly, in some ways individuals continue to grow and change through their life span, while in other respects their behavior remains stable, which leads to a wide range of individual differences in developmental trajectories.

The ongoing transactions between individuals and their contexts allow for continuity in their development, but also can provide opportunities for change. Lerner, Leonard, Fay and Issac (2011) explain that when a behavior takes the same form at different time points descriptive continuity exists, whereas if that behavior can no longer be represented in the same way between time points descriptive discontinuity exists. Similarly, when the same variables can be used to

account for developmental processes at different time points explanatory continuity exists, but when the variables needed to account for developmental processes vary at different time points explanatory discontinuity exists. An example could be how, at a young age, an individual rides their bicycle because it provides them with the opportunity to bond with a sibling, but later during adulthood realizes it's the sense of accomplishment attained by breaking personal records that he/she finds to be motivating. In this example we observed descriptive continuity (riding a bicycle) and explanatory discontinuity (motivations for the behavior).

Early experiences in life also constitute the basis to observe continuity over the course of development. For example, the ability to form affective bonds early in life with a caregiver is linked with later ability to positively relate with the peer group (Sroufe et al., 2005) and to form secure romantic relations (Collins & Feeney, 2000). Continuity also can be observed across domains. This continuity over time and across domains is exemplified in the Project Competence Longitudinal Study, where Masten et al. (2010) explained how social competence with peers and academic achievement during adolescence prospectively related with work performance. This relates with the concept of developmental cascades previously discussed. According to McCormick, Kuo, and Masten (2011) developmental cascades refer to the "cumulative consequences of the dynamic interactions in systems across levels of function or domains of function over time." (p.129). A definition provided by Masten and Cicchetti (2010) underlines that developmental cascade effects can be observed across levels, among domains at the same level, and across different systems or generations. Thus, problems in one domain can compromise functioning in another domain. For example, problems at home relate to behavioral problems at school and poor academic performance which in turn might increase the risk for

other problems like depression and anxiety (Burt & Roisman, 2010; Masten & Tellegen, 2012; Masten et al., 2005)

Masten and Narayan (2012) described how theoretical pathway models of resilience in the context of acute and chronic adversity have been developed by some resilience researchers. These models provided examples of different patterns of adaptive behavior over time after a traumatic experience or ongoing adversity. Some of the patterns described by the authors include stress-resistance (a pattern with minor disruption of function), a recovery pattern (interruption and recovery of function in response to a sudden stressor), and posttraumatic growth (improvement in function following adversity). Some researchers also include maladaptive patterns in their pathway models, where interruption or decreases in function occur as a result of exposure to adversity followed by little or no recovery. This is important, because it supports the claim that not all individuals follow the same pattern of resilience, there are variations and those variations may indicate differential susceptibility to contextual factors. Although some empirical evidence has been provided regarding differences in resilience pathways (La Greca et al., 2013; Masten and Powell, 2003) there is still a shortage of prospective analyses examining the stability of resilience over time, and even more in diverse contexts.

Next, a glossary of key terms discussed in the chapter is presented in Table 2.

Table 2.

Key Terms for the Study of Resilience in Context

Proximal Influence	Specific social, physical, or symbolic contextual characteristics that directly impinge on the child (Wachs, 2000).
Distal Influence	Cultural and subcultural characteristics, societal institutions, societal disruptions, place of residence, social class, and parental work situation or social support networks (Wachs, 2000).
Resilience	Dynamic developmental process encompassing the attainment of positive adaptation within the context of significant threat, severe adversity, or trauma (Cicchetti, 2010) Capacity of a dynamic system to withstand or recover from adversity (Masten, 2007)
Developmental Task	Milestones expected to be accomplished by individuals in a given period of development according to expectations and values of a given sociocultural context (McCormick, Kuo, & Masten, 2011)
Risk	Probability of a specific undesirable outcome (Masten, 2013)
Cumulative Risk	The sum in time of multiple risk factors or the total effect of multiple risk factors (Masten, 2013)
Promotive Factor	Factors that enhance positive adaptation regardless of risk level (Masten, 2013; Panter-Brick, & Leckman, 2013)
Protective Factor	Factors that predict a higher probability of positive outcomes in the context of high risk or adversity. They might counter, mediate or moderate the impact of risk factors (Masten, 2013)
Stress	Disruption of functioning due to the imbalance between demands impose on a person and the actual or perceived resources to meet those demands (Masten, 2013)
Stressors	Experiences that lead to stress responses (Masten, 2013)

Summary of chapter

This chapter began with a discussion of how Sameroff's transactional model and Bronfenbrenner's ecological model of human development offer a framework for the understanding of the complex transactions that take place between the individual and contexts and the multilevel nature of the contexts where development takes place. The discussion then turned to the description of risk and protective factors associated with an individual's development, and how they interact to either deter or promote positive adjustment. Next, the progress in the conceptualization and study of resilience was discussed together with the role of

context in resilience processes. Gaps and current directions in resilience research were also presented. Lastly, continuity and discontinuity in developmental trajectories were described, and a rationale for the study of resilience processes among youth in diverse contexts and potential changes in adjustment profiles over time was provided. Finally a glossary of key terms discussed in the chapter was presented in Table 2.

The Present Study

The present study adds to the resilience literature by providing additional evidence of the existence of diverse profiles of adjustment among youth who have experienced some kind of adversity in a particular cultural context. Specifically, the present study expanded the analyses of adjustment profiles among youth in Medellin, Colombia, Guatemala and Chicago, USA by exploring the following questions: 1) In the presence of adversity and risk, are different profiles of adjustment observed among youth in Medellin, Colombia, Guatemala and Chicago, USA? One or more profiles may reflect resilience. 2) Assuming profiles can be identified, how do these profiles differ in terms of demographic characteristics, and how do they differ in terms of protective factors known to be related to positive adjustment? 3) To what extent do known protective factors predict membership to any given profile of adjustment? How consistent are these predictors across the three samples? 4) When examined prospectively, do identified profiles of adjustment replicate at different points in time? 5) Given the case that some youth transition from one profile to another over time, how protective factors related to said transitions?

Based on the previously examined literature related to development in context and resilience, the following results were hypothesized.

Statement of the Hypotheses

Hypothesis 1. In the presence of adversity and risk, different profiles of adjustment will emerge among youth in the three contexts examined in this study: Medellin, Colombia, Guatemala, and Chicago, USA. One or more of these profiles will exhibit resilience, defined as more one or more standard deviations from the mean in one or more areas of functioning.

Hypothesis 2. Some youth will display good or exceptional adjustment in some domains while struggling in others.

Hypothesis 3. The effect of protective factors will vary across profiles of adjustment, and across the three contexts examined.

Hypothesis 4. Continuity and discontinuity over time would be observed among the profiles of adjustment in the Chicago dataset.

Finally, given the dearth of studies examining the potential transition from one profile of adjustment to another over time, no a priori hypotheses regarding the role of protective factors in that potential transition were formulated.

Details regarding the study design, sample characteristics and proposed analytical approach are presented in the next chapter.

Method

The present study comprised secondary data analyses of survey data from three studies: (1) the Mental Health of Adolescents in Medellin study (Torres, Osorio, Lopez, & Mejia, 2006), a cross-sectional survey collected from local representative samples of adolescents residing in the city of Medellin, Colombia during 2006; (2) the Risk and Protective Factors for Problem Behavior in Adolescents from Central America study (Murrelle, 2001), also a cross-sectional survey study, collected from local representative samples of adolescents residing in Central

American countries, including Guatemala, during 2000 -2001; and (3) the Project of Human Development in Chicago Neighborhoods (PHDCN), a longitudinal survey study collected from local representative samples of adolescents, their parents, and interview staff residing in the city of Chicago, USA between 1996-2002 (Earls & Buka, 1997).

The samples were considered appropriate for the aims of the present study, given an ecology characterized by pervasive risk factors (e.g. poverty, exposure to community violence, organized crime, and stressful events) but also relevant protective factors (e.g. personal belief in God, positive family dynamics, prosocial peers, and positive relationships with teachers). Description of participant characteristics, measurement, procedures, and criteria for sample selection is presented for each context.

Medellin, Colombia

Participants

Cross-sectional survey data collected from a local representative sample of adolescents residing in the city of Medellin, Colombia (See Fig 1), in 2006 was analyzed. The parent study (*N*= 3,702) was sponsored by the Center for Disease Control in Medellin, Colombia and a local University (Universidad CES). The scope of the larger study was to describe the mental health of adolescents in the city of Medellin in terms of prevalence, morbidity, and co-morbidity, as well as to identify risk and protective factors associated with mental health problems among youth in Medellin (Torres et al., 2006).

The current study used a sub-sample of 967 youth from Medellin, Colombia who reported severe experiences of stressful events during the past year (see Table 3 for percentages of participants reporting each stressful event). Severe experiences of stressful events were determined by an affirmative response to 6 or more stressful events. Thus, the final sample for

the present study constituted 967 youth (26% of the original sample); 57% female, between 10 and 18 years old (*M*=13.9 years; *SD*= 2.0 years), 56.2% of the sample attended public schools and 38.3% had a nuclear family (see Table 4 for a summary of sample demographics).

Figure 1. Medellin, Colombia. Medellin is the second largest city in Colombia and has a history of violence due to decades of conflict between the established government and anti-government insurgent groups, as well as the war against the narcotics industry (Kliewer, Mejia, & Torres, 2015). Some research has indicated the prevalence of problem behaviors (e.g. violent behaviors and substance use) among youth in Medellin, and a culture of legitimization of violence as a means to protect the family (Duque , Orduz , Sandoval, & Caicedo , 2007). Together, these factors constitute a form of ecological disadvantage particular to this context.

Measures

Using validated scales for constructs of interest (known risk and protective factors associated with mental health problems among youth) two versions of the "Adolescent mental health survey" were created; the first version was reviewed by a panel of experts including social workers, psychologists, and epidemiologists working with the population of interest, adolescents. After receiving feedback from the group of experts a second version of the instrument was

developed and validated in a pilot study (Torres et al., 2006). The final survey included questions regarding socio-demographic characteristics, stressful events during the past year, self-esteem, depression, anxiety, violent behavior, problems at school, problems with drugs, family cohesion, religiosity, social support network, and relationship with teacher.

Demographics. Adolescents provided descriptive information regarding their age, sex, school grade, type of school attended, family structure, and number of family members living in the household.

Table 3.

Percentages of Medellin Participants Reporting Past Year Stressful Events

Stressful Event	Percentage Experienced
Changes at home or school	68.4
Serious illness or accidents	35.2
Economic hardship	64.0
Parents separated or divorced	29.3
Fights between parents	67.7
Illness or accidents of parents/siblings	44.2
Illness or accidents of grandparents	55.1
Dead of parents/siblings/ grandparents	35.4
Dead of any other family member or friend	60.8
Fights/conflict with a family member	64.7
Breakup with boyfriend/girlfriend	63.6
Legal problems or encounter with police	9.0
Robbery of personal belongings	22.3
Failure at school	40.2
Pregnancy (yourself or partner)	5.9
Physical abuse	8.5
Sexual Abuse	4.3
Lost/dead of pet	41.1
Any other serious trouble	41.1

Stressful events during the past year. Adolescents reported on their experiences of stressful events during the past year using a 19-item scale with Yes/No as response options. Sample items are, “Parents separated or divorced?”, and “Legal problems or encounter with

police?" A total score variable was available reflecting the total number of stressful events experienced, values for the total score ranged from 0 to 19, with about 25% of youth reporting 6 or more events.

Table 4.

Demographic Characteristics Medellin Sample

Demographic	N	%	M	SD
Males	412	43%	-	-
Females	555	57%	-	-
Age	-	-	13.9	1.98
Nuclear Family	370	38%	-	-
Non-Nuclear Family	597	62%	-	-
Public School	543	56%	-	-
Private School	424	44%	-	-

Engagement in Violent Behavior. Adolescents reported on their engagement in violent behavior using a 15-item scale, with Yes/No as response options. Sample items are "Have you carried a gun to school?," "Have you hurt or harmed another person?," and "Have you intentionally damaged other people's belongings?" A total score variable was available reflecting the total number of violent behaviors reported by youth participating in the study, with higher scores indicated higher occurrence of violent behavior. Values for the total score ranged from 0 to 14.

Internalizing problems. Adolescents reported on their levels of depression (37 items, with response options including 1 (almost never), 2 (rarely), 3 (sometimes), and 4 (almost always)); and anxiety (20 items with response options including 1 (almost never), 2 (sometimes), and 3 (frequently) Higher scores indicated higher levels of depression or anxiety. Sample items are "Do you worry about what things happen to you?," "Do you feel like harming yourself?,",

and “Do you feel that bad things are your fault?” Cronbach alpha for depression was 0.91 and Cronbach alpha for anxiety was 0.90.

Problems at School. Adolescents reported on their levels of problems at school using an 8-item scale, with Yes/No as response options. Sample items are “Have you seriously considered quitting school?” and “Have you been suspended from school?” A total score variable was available reflecting the total number of problems at school reported by youth participating in the study, with higher scores indicated higher occurrence of violent behavior, values for the total score ranged from 0 to 8.

Family Cohesion. Adolescents reported on their levels of family cohesion, using a 8-item scale, with response options including 1(never), 2(rarely), 3(sometimes), 4(frequently), and 5(always). Higher scores indicated higher levels of family cohesion. Sample items are “Do we engage in a family activity at least once per week?” and “As a family do we take some time to share every night?” Cronbach alpha for family cohesion was 0.77

Personal Belief in God. Adolescents reported on their levels of religiosity, using a 5-item scale, with response options including 1(strongly agree), 2(somewhat agree), 3(somewhat disagree), and 4(strongly disagree). The variable was recoded so higher scores indicated higher levels of belief in God. Sample items are “My faith in God helps me during difficult times.” and “I believe in God.” Cronbach alpha for personal belief in God was 0.80.

Relationship with the teacher. Adolescents reported on their relationship with their teacher, using a 5-item scale, with response options including 1 (never), 2(rarely), 3(sometimes), 4(frequently), and 5(always). Higher scores indicated a better relationship with the teacher. Sample items are “I’m satisfied with the way I relate with my teacher” and “It’s easier for me to

express to him/her how I feel regarding academic problems." Cronbach alpha for relationship with teacher was 0.82.

Prosocial Behavior. Adolescents reported on their prosocial behaviors, using a 8-item scale, with response options including 1 (never), 2(occasionally), 3(almost always), and 4(always). Higher scores indicated higher levels of prosocial behavior. Sample items are "I help others when they struggle to complete a task" and "I help others when they cry." Cronbach alpha for prosocial behavior was 0.83.

Procedure

Following protocols from the Colombian department of public health, private and public schools in the city of Medellin, Colombia were invited to participate in the parent study. School principals were contacted over the phone and received an official letter from the Colombian department of public health inviting them to participate in the study and to meet with a member of the research team in order to gather detailed information. Once school principals accepted to participate, students were invited to answer the questionnaire; confidentiality was explained as well as the strictly voluntary character of their participation in the study. No compensation was offered for participation in the study. While students were completing the survey in class, research assistants trained in the goals and methods of the study, were available to answer students' questions and did emphasize the fact that the students' responses were confidential, and that students had the opportunity to refuse or to discontinue participation at any time. Students were not allowed to write their names on the questionnaires and were cautioned not to look at the responses of their peers. All IRB standards were met (Torres, Osorio, Lopez, & Mejia, 2006).

Guatemala

Participants

Cross-sectional survey data collected from a local representative sample of adolescents residing in Guatemala (See Fig 2) in 2004 was analyzed. The scope of the parent study (*N*= 6,668) was to analyze the associations between known risk and protective factors, adolescent drug use/ dependence, and violent behavior among several Latin American countries (Kliewer & Murrelle, 2007).

The current study used a sub-sample of 2,470 youth from Guatemala, who reported higher levels of exposure to community violence (ECV). Higher levels of ECV were determined by the frequency in which participants experienced ECV. Thus, the final sample for the present study constituted 2,470 youth (25% of the original sample); 56% male, between 12 and 18 years old (*M*=15.3 years; *SD*= 1.7 years), 78.3% of the sample attended public schools and 25% came from single parent households (see Table 5 for a summary of sample demographics).

Measures

Using validated scales for constructs of interest the instrument was developed and translated by a group of bilingual mental health professionals, including psychiatrists, psychologists, social workers, educators, and epidemiologists; the instrument was then validated in a pilot study with a Panamanian sample of 988 adolescents (Kliewer & Murrelle, 2007). The final questionnaire included questions regarding socio demographic characteristics, psychological dysregulation, engagement in violent behavior, problems with alcohol and drugs, ECV, family cohesion, religiosity, and relationship with teacher.

*Figure 2.*Guatemala, Central America. During the past decades Central American countries have struggled with pervasive poverty, increased drug trafficking, and guerilla violence; these factors are conductive of drug use, violent behavior, and gang involvement among Central American youth (Kliewer & Murrelle, 2007; Murrelle, 2001). Towards the end of the 1990's and throughout the first decade of the millennium, Guatemalan youth were particularly impacted by community violence, territory conflict between local gangs, kidnapping, and organized crime; all of these factors in addition to the ongoing problems of poverty and limited educational/employment opportunities contributed to the overall ecological disadvantage in this particular context (Rodenas et al., 2005).

Demographics. Adolescents provided descriptive information regarding their age, sex, school type and family structure.

Exposure to Community Violence. Adolescents reported on their levels of exposure to community violence, using a 5–item scale, with response options including 1 (never), 2 (one time), 3 (several times), and 4 (many times). Higher scores indicated higher levels of exposure to violence. Sample items are, “How often have you *seen* someone else being attacked or stabbed with a knife?,” and “How many times have you actually *seen* someone being killed by another person?” Cronbach alpha for violence exposure was 0.82.

Table 5.

Demographic Characteristics Guatemala Sample

Demographic	N	%	M	SD
Males	1377	56%	-	-
Females	1093	44%	-	-
Age	-	-	15.3	1.7
Single parent household	611	25%	-	-
Non- single parent househ	1859	75%	-	-
Public School	1934	78%	-	-
Private School	526	22%	-	-

Depression. Adolescents reported on their depression levels using a 6-item scale, with response options including 0 (untrue), 1 (sometimes), and 2 (true). Higher scores indicated higher levels of depression. Sample items are, "Have you felt lonely?" and "Have you felt that you hate yourself?" Cronbach alpha for depression was 0.80.

Engagement in violent behavior. Adolescents reported on their engagement in violent behavior using an 11-item scale, with response options including 0 (never), 1 (once or twice), 2 (three to four times), and 3 (five or more times). Higher scores indicated higher occurrence of violent behavior. Sample items are “Have you carried a gun to school?” and “Have you hurt or harmed another person?” and “Have you intentionally damaged other peoples’ belongings?” Cronbach alpha for engagement in violent behavior was 0.81.

School Disengagement. Adolescents reported on their school commitment using a 6-item scale, with response options including 0 (never), 1 (sometimes), 2 (many times), and 3 (always). Higher scores indicated greater school disengagement. Sample items are "Have you missed class without an excuse?" and "Have you fallen asleep during class?" Cronbach alpha for school disengagement was 0.72.

Family Cohesion. Adolescents reported on their levels of family cohesion using an 11-item scale, with response options including 0 (never), 1 (sometimes), 2 (many times), and 3 (always) .Higher scores indicated higher levels of family cohesion. Sample items are "We engage in a family activity at least once per week" and "As a family we take some time to share every night." Cronbach alpha for family cohesion was 0.82.

Personal Belief in God. Adolescents reported on their levels of religiosity, using a 5-item scale, with response options including 1 (strongly agree), 2(somewhat agree), 3(somewhat disagree), and 4(strongly disagree). The variable was recoded so higher scores indicate higher levels of belief in God. Sample items are "My faith in God helps me during difficult times", and "I believe in God." Cronbach alpha for personal belief in God was 0.74.

Relationship with the teacher. Adolescents reported on their relationship with their teacher using a 5-item scale, with response options including 0 (never), 1 (sometimes), 2 (many times), and 3 (always). Higher scores indicated a better relationship with the teacher. Sample items are "I'm satisfied with the way I relate with my teacher" and "It's easier for me to express to him/her how I feel regarding academic problems." Cronbach alpha for relationship with the teacher was 0.70.

Support from Others. Using a 9-item scale, Adolescents reported on their support from others (e.g. older siblings, neighbors, grandparents) selected from the people with whom they felt

comfortable talking about their feelings and thoughts. A total score variable was available reflecting the total number of people selected by the participants, with higher scores indicating higher support from others. Values for the total score ranged from 0 to 9.

Procedure

Several regions in Guatemala were selected to participate in the study (e.g. Alta and Baja Verapaz, Chimaltenango, Chiquimula, El Progreso, Escuintla, Guatemala City, Huehuetenango, Izabal, Jalapa, Jutiapa, Peten, Quetzaltenango, Quiche, Retalhuleu, Sacatepequez, San Marcos, Santa Rosa, Solola, Suchitepequez, Totonicapan, and Zacapa). Using multistage cluster sampling stratified by age, sex, and geographic region, schools and classrooms were randomly selected from these regions (Kliewer & Murrelle, 2007).

Following the protocols used by the Ministry of Education, passive consent was used. Two weeks before the day of the study, parents received a letter from the school principal explaining the study and giving them the opportunity to "opt out" on behalf of their children (Kliewer & Murrelle, 2007). Parents who did not agree with their children participating in the study returned the consent form to the school indicating their disapproval. In addition, on the day of testing, students also had the opportunity to opt out of the study. Less than 1% of the students chose not to participate; all students present in the selected classrooms on the day of the survey who had not opted out of the study were included in the target sample. No compensation was offered for participation in the study. Research assistants, who were specifically trained in the goals and methods of the study, were available to answer students' questions and did emphasize the fact that the students' responses were confidential, and that students had the opportunity to refuse or to discontinue participation at any time. Students were not allowed to write their names on the questionnaires and were cautioned not to look at the responses of their peers. During the

administration of the survey official school personnel and classroom teachers were absent. All IRB standards were met (Kliewer & Murrelle, 2007).

Chicago, USA

Participants

Longitudinal survey data collected from a local representative sample of adolescents residing in Chicago, USA (See Fig 3) between 1997 and 2001 was analyzed. The scope of the parent study Project on Human Development in Chicago Neighborhoods (PHDCN) was to examine how families, schools, and neighborhoods impact child and adolescent development, with an emphasis on the understanding of factors related to both positive and negative developmental pathways (Earls & Visher, 1997). The PHDCN was a community – based multilevel longitudinal study with a Longitudinal Study Cohort (LCS) component that was used for this dissertation. The project's participants in the longitudinal cohort study (*N*= 6,668) were drawn from 80 selected neighborhoods that showed sufficient demographic variability. Seven cohorts representing the age of the participants at wave 1 of data collection (0, 3, 6, 9, 12, 15, 18) were followed longitudinally from 1994 to 2001. Given that the interest of the present study was focused on youth, only participants from cohorts 9, 12, 15, and 18 were initially considered. However, due to incomplete longitudinal data for cohorts 15 and 18 on the variables of interest, only youth from cohorts 9 and 12 (*N*=1,288) with information on their levels of exposure to community violence (ECV) were considered in the preliminary analyses to determine the sample for this study.

Figure 3. Chicago, USA. Chicago, is one of the largest cities in the USA and the third most populous city after New York and Los Angeles. Racial inequalities have been pervasive over the years, leading to significant social and health disparities (Block & Block, 1993). For the last couple of decades the city crime rate has been above the US average. During the 1990's, community violence, crime, drug trafficking, and street gang activity impacted the lives of many youth, particularly the lives of those living in impoverish areas (Pratt, 2013). Together, these factors constitute a form of ecological disadvantage particular to this context.

The current study used a sub-sample of 491 youth from Chicago, USA, who reported high levels of ECV at wave 2. Wave 2 (1997- 2000) was used as baseline given the inclusion of additional items that allowed for a more detailed assessment of ECV than the scale use in wave1(Buka, Selner-O'Hagan, Kindlon, & Earls, 1997). High levels of ECV were determined by an affirmative response to 3 or more events of ECV for youth in cohort 9 (top 25% of scores in the distribution), and by an affirmative response to 5 or more events of ECV for youth in cohort

12 (top 25% of scores in the distribution). Thus, the final sample for the present study constituted 491 youth, 59% male; between 9 and 16 years old (*M*=12.6 years; *SD*= 2.0 years), 44% Black, 34.6% Hispanic, 7% White and 14.4 % other (see Table 6 for a summary of sample demographics).

Measures

The PHDCN used validated scales for constructs of interest for each cohort at each wave. The final protocol included questions regarding socio demographic characteristics, exposure to violence, child behavior problems, positive peer influence, social support network, and engagement in positive activities.

Demographics. Adolescents and caregivers provided descriptive information regarding child age, sex, race, and ethnicity, family structure, number of family members living in the household, and welfare assistance.

Exposure to violence. Using the My Exposure to Violence scale (Buka et al., 1997), adolescents reported on their levels of exposure to 24 different violent events in the community in the past year with Yes/No as response options. Sample items are, “In the past year have you seen anyone being attacked at school?” and “In the past year have you seen anyone carrying a gun?” A total score variable was available reflecting the total of exposure to violence events. Values for the total score ranged from 0 to 24.

Internalizing problems. Youth reported on their anxious, depressive, and over controlled symptoms using 28 items from the Youth Self-Report (YSR; Achenbach, 1991) scale, with response options including 0 (not true), 1 (somewhat or sometimes true), and 2 (very true or often true). A total score for the internalizing problems subscale was available in the original data set. Higher scores indicated higher levels of internalizing problems. Sample items are “cry a

lot" and "I feel fearful or anxious." The YSR has been widely used to assess problem behaviors among diverse populations of children and youth, displaying high reliability and validity (Achenbach & Rescorla, 2001; Ebesutani et al., 2011).

Table 6.

Demographic Characteristics Chicago Sample

Demographic	N	%	M	SD
Males	288	59%	-	-
Females	203	41%	-	-
Age	-	-	12.6	2.0
Black	215	44%	-	-
Hispanic	170	35%	-	-
White	33	7%	-	-
Other	73	14%		
Receive Welfare	135	28%		
No Welfare	338	69%		

Externalizing problems. Youth reported on their aggressive, hyperactive, noncompliant, and under controlled symptoms using 15 items from the YSR, with response options including 0 (not true), 1 (somewhat or sometimes true), and 2 (very true or often true). A total score for the externalizing problems subscale was available in the original data set. Higher scores indicated higher levels of externalizing problems. Sample items are "temper tantrums or hot temperament" and "gets in many fights." The YSR has been widely used to assess problem behaviors among diverse populations of children and youth, displaying high reliability and validity (Achenbach & Rescorla, 2001; Ebesutani et al., 2011).

Self-efficacy. Adolescents reported on their levels of self efficacy using 30 items from the Things That I Can Do if I Try survey, designed specifically for the PHDCN (Eccles, Wigfield, Harold, & Blumenfeld, 1993). The survey assessed participants' perceived self efficacy in five domains: future, school, neighborhood, home, and social, with response options

including 1 (very true), 2 (sort of true), 3 (sort of untrue), and 4(very untrue). The variable was recoded for the present study, so higher scores indicated higher self efficacy. Sample items are “I can get adults to listen to me” and “I can become successful.” Total scores for the scale were calculated with a Cronbach alpha of 0.83 at wave 2 and 0.87 at wave 3.

Health. Parents reported on their children general health status in one item from the Health Screen Protocol administered to assess the general health condition of the child participants in the study. Parents rated their children's health as either 1 (excellent), 2 (very good), 3 (good), 4(fair), or 5 (poor). The variable was recoded for the present study, so higher scores indicated better health.

Educational Expectations. Adolescents reported on their educational expectations in one item from the School Interview Survey "how far would you like to go in school?" Response options ranged from 8th grade or less to some college, graduate college, and more than college. Higher scores indicated higher educational expectations. The School Interview Survey was adapted from the Youth Interview Schedule used in the Philadelphia Family Management Study (1990), and included sections about school climate, participation in activities within and outside of school, school safety, the subject's attitude toward school, and past history of repeating or skipping grades.

Future Orientation. Adolescents reported on their future orientation in one item from the Personal Identity Survey (Teplin, 1994): "In the future, do you think that most neighbors will be better off than yourself ?" The Personal Identity Survey was designed to obtain information regarding racial and ethnic identity, future orientation and discrimination. Response options for future orientation ranged from strongly agree to strongly disagree. The variable was recoded so

higher scores indicated a more positive view of the future. This item was only available for wave 3.

Positive Demeanor. Interviewers rated participant's levels of friendliness and cooperation during their one-on-one interaction/interview. Ratings ranged from "quite uncooperative" to "extremely cooperative;" and from "exceptionally shy" to "indiscriminately friendly." Variables were recoded so higher scores reflected functional levels of cooperation and friendliness, then both variables were standardized and then combined in a composite variable “positive demeanor."

Intelligence. Participants completed 32 items of the verbal subtest vocabulary from the Wechler Intelligence scale revised (WISC-III; Wechsler, 1974). Both the Wechler Intelligence scale for children revised and the Wechler Adult Intelligence scale are widely used with diverse youth samples displaying high reliability and validity (Wechsler, 1974). Raw and scaled total scores were provided in the original data set; for the present study scaled scores were used.

Engagement in Constructive Activities. Using the School Interview, participants were asked to report the frequency with which they engaged in constructive activities both within and outside of school such as organized sports, volunteer work, school government, church group, or arts. Response options ranged from almost daily to never, and a total score was created reflecting the total frequency with which participants engaged in extracurricular, prosocial, and constructive activities. Answers were recoded so higher scores indicated more frequent engagement in constructive activities.

Religious Beliefs. Adolescents reported on their religious beliefs in one item from the Personal Identity Survey (Teplin, 1994): "How important are religious beliefs for you?" Response options ranged from very important to not at all important. The variable was recoded

so higher scores indicated higher importance of religious beliefs. This item was only available for wave 3.

Family Support. Using the Provision of Social Relations instrument (Turner, Frankel, & Levin, 1983) that includes items regarding family support, friends support, and other adult support; youth reported on their perceived levels of family support using five items. Sample items were “I know my family will always stand by me,” and “My family has confidence in me.” Response options were 1 (very true), 2 (somewhat true), and 3 (not true). The variable was recoded so higher scores indicated higher levels of family support. Total scores for the scale were calculated with a Cronbach alpha of 0.82. The Provision of Social Relations instrument was only available for wave 3.

Caregiver Involvement. Given the absence of a family support variable in wave 2, caregivers’ reports on the household rules (with Yes/No as response options) were used as a proxy for family involvement. Sample items were “Does your child has regular bedtime during school week?” and “ Does your child has a curfew for weekend nights?” A total score was created reflecting caregiver involvement (setting and enforcing rules), with higher scores indicated higher involvement.

School Attachment. One item from the School Interview (Teplin, 1994) was used as a proxy for adolescent's feelings towards school: "I like school a lot." Response options ranged from strongly agree to strongly disagree. The variable was recoded so higher scores indicated stronger attachment towards the school.

Relationship with Teacher. One item from the School Interview (Teplin, 1994) was used as a proxy for adolescents’ perception of their relationships with teachers: "get along well

with teachers." Response options ranged from strongly agree to strongly disagree. The variable was recoded so higher scores indicated better relationships with teachers.

Positive Peer Influence. Using the Deviance of Peers survey (Huiszinga, Esbenson, & Weihar, 1991), youth reported in the number of peers involved in prosocial activities. Sample items were “How many friends do you consider to be good citizens? ” and “How many friends do you consider to be generally honest and tell the truth?” Response options were 1 (none), 2 (some), 3 (most), and 4 (all). A total score was computed with higher scores indicated higher numbers of prosocial peers. Cronbach alpha was 0.89 for wave 2 and 0.67 for wave 3.

Procedure

The longitudinal cohort study component of the PHDCN consisted of a series of coordinated longitudinal studies that followed over 6,668 children, adolescents, and young adults (randomly selected from wave 1) to study individual and contextual risk and protective factors related to youth development. Data was mostly collected through face-to-face interviewing in participants’ homes, although some phone interviews also were conducted. A description of the study’s purposes and procedures, and issues of confidentiality was provided to all participants, as well as the opportunity to discontinue the interview at any time. Data collection for wave 2 began in 1997 and ended in 2000, and for wave 3 began in 2000 and ended in 2002. For all cohorts except 0 and 18, primary caregivers as well as the child were interviewed by separate trained research assistants at the participant's home. When needed, arrangements were made to have translators available during the interview. Participants were compensated for their participation in the study (for additional description, see Earls & Buka, 1997; Sampson, Raudenbush, & Earls, 1997).

Analytic Approach

In order to establish the domains of adjustment that would comprise the Latent Profile Analysis (LPA) for each sample, zero-order associations among indicators were computed. Significant associations ranged between .38 and .49. Indicators for each LPA were based on the data available in the sample and the pattern of correlations among indicators. For the Medellin, Colombia sample three indicators were used: Internalizing problems (a composite variable based on depression and anxiety scores), violent behavior, and problems at school. Similarly, the Guatemala sample had three indicators: Depression, violent behavior, and school disengagement. The Chicago, USA sample had four indicators: Internalizing problems, externalizing problems, self-efficacy, and general health. All variables considered as domains of adjustment were standardized in order to allow comparisons across domains. Participants scores above or below 1*SD* from the mean were consider as potential indicators of problem behaviors or resiliency. After determining domains of adjustment for each sample analyses were conducted in five steps using SPSS and Mplus version 7.13 (Muthén & Muthén, 2012). First, using *Latent Profile Analysis*, contrasting adjustment profiles among youth who experienced adversity and risk were explored. Second, *Logistic Multivariate Regression Analysis* was used to determine the extent to which known protective factors predicted membership in any given profile of adjustment. Logistic regression also was used to determine how the profiles differed demographically. Next, *Latent Profile Analysis* was used to determine if adjustment profiles identified at Wave 2 replicated at Wave 3 in a longitudinal data set (PHDCN). Finally, *Transition Analysis* were used to explore the possibility that some youth transition from one profile to another over time, as well as the potential contribution of protective factors to this transition.

Results

Adjustment Profiles: Medellin, Colombia

Correlations among the three indicators included in the latent profile analysis were (r =.076) for internalizing problems and violent behavior; (r = .30) for internalizing problems and problems at school; and (r =.38) for violent behavior and problems at school. All correlations were significant at p<.05.

Latent Profile Analysis revealed that in the presence of adversity different adjustment profiles were observed among youth in Medellin, Colombia. Based on model fit statistics a five-group solution was chosen. Although the VLMR - LRT test comparing the five-class model to the four-class model fell short of significance (p= .001), the five-class model fit the data better than models specifying fewer classes based on the other fit indices (see Table 7). Furthermore, the five profile classification provided a highly interpretable solution (See Fig 4), with five distinctive groups identified.

Adolescents in group 1 (N=461) scored the highest on internalizing problems and slightly below the mean in terms of problems at school and engagement in violent behavior. This group was labeled as "high internalizing". Adolescents in group 2 (N=244) scored 2 *SD* below the mean in terms of internalizing problems, and below the mean in violent behavior, and school problems. This group was labeled as "resilient." Adolescents in group 3 (N=70) also scored 2 *SD* below the mean in terms of internalizing problems, and under the criteria defined in this study are considered resilient regarding internalizing symptoms. However, this group also scored 1*SD* above the mean in the engagement in violent behavior domain, and their school problems was around the mean. This group was labeled as "Violent." Adolescents in group 4 (N=154) scored about 1*SD* above the mean in all three domains (internalizing, engagement in violent behavior,

and problems at school) thus they were labeled as "multiple problems." Lastly, Adolescents in group 5 (*N*=38) scored above 2 *SD* in terms of violent behavior, and above 1 *SD* in school problems. This group was labeled as Excessive problem behavior.

Table 7.

Model Fit Statistics for Latent Class Analyses Models Specifying One To Five Classes Medellin

	Number of Classes				
	1	2	3	4	5
Loglikelihood Information criteria	-4530.72	-4385.37	-4279.55	-4251.94	-4206.92
N of free parameters	6	10	14	18	22
AIC	9073.44	8790.75	8587.10	8539.87	8457.83
BIC	9102.68	8839.49	8655.34	8627.61	8565.06
Sample Size Adjusted BIC	9083.63	8807.73	8610.87	8570.44	8495.19
Entropy	na	0.86	0.80	0.78	0.79
Lo, Mendell, Rubin Test (Tech 11)	Na	-4530.72 p < .001	-4385.37 p < .001	-4279.55 p = .057	-4254.61 p < .001
Bootstrapping (Tech 14)	na	-4530.72 p < .001	-4385.37 p < .001	-4279.55 p < .0001	-4254.61 p < .0001
N for each class (Based on most likely classification)	C1 = 967	C1 = 861 C2 = 106	C1 = 308 C2 = 588 C3 = 71	C1 = 55 C2 = 187 C3 = 259 C4 = 466	C1 = 461 C2 = 244 C3 = 70 C4 = 154 C5 =38

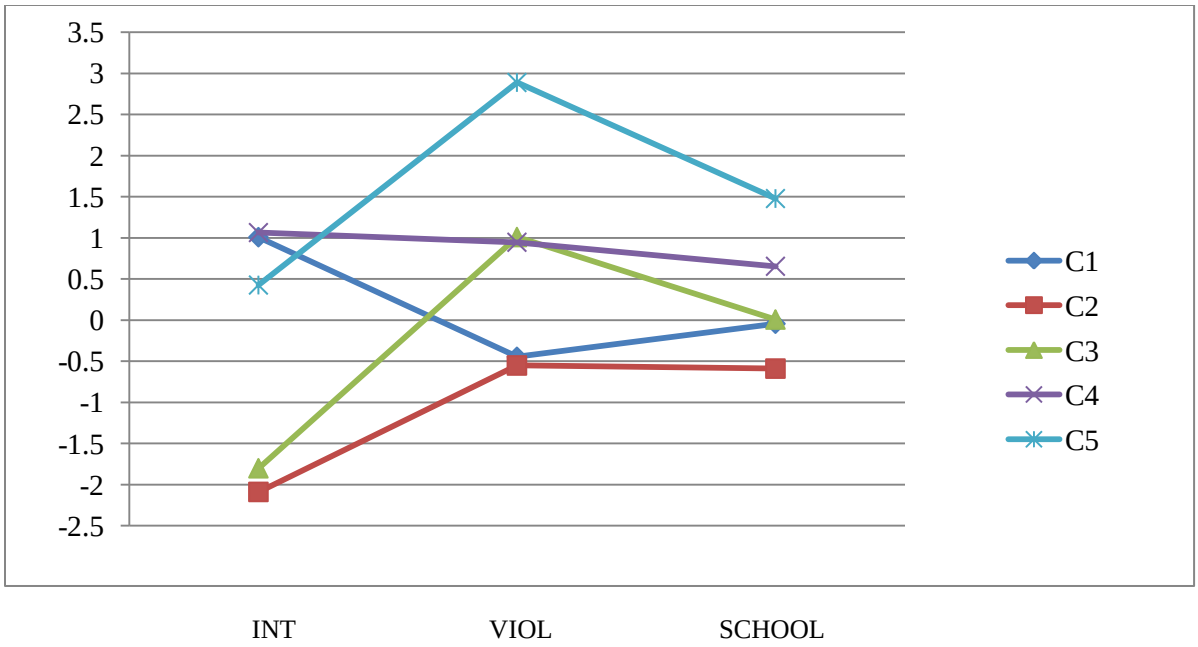

Figure 4. Adjustment profiles among youth in Medellin, Colombia. INT= Internalizing problems; VIOL= engagement in violent behavior; SCHOOL= problems at school.

Predictive Effect of Protective Factors: Medellin, Colombia

Logistic Multivariate Regression Analysis was used to determine the extent to which known protective factors predicted the likelihood of group membership in any of the five profiles of adjustment identified. The model provide estimates for each variables after controlling for the effects of the other variables. Positive estimates indicate higher likelihood of class membership relative to the reference group, and negative estimates indicate lower likelihood. As seen in Table 5, covariates and adjustment correlates did predict differences in group membership. Compared to the violent and multiple problems groups, more girls than boys were classified as resilient. Youth with higher levels of family cohesion were more likely to be classified as resilient when compared to youth classified in the Excessive problem behavior, high internalizing, and multiple problems groups. Youth with higher levels of a personal belief in God

were more likely to be classified as resilient when compared to youth classified in the Excessive problem behavior and multiple problems groups. Finally, Table 8 shows that youth in the Excessive problem behavior group had the lower levels of prosocial behavior, and that a positive relationship with a teacher was a significant predictor regarding classification in the resilient group over the multiple problems group, and in the violent group over the Excessive problem behavior group.

Lastly, Table 9 offers a detailed description of the distribution of sex across groups and means values of the protective factors in each group.

Adjustment Profiles: Guatemala

Correlations among the three indicators included in the latent profile analysis were (r = .15) for depression and violent behavior; (r =.33) for depression and school disengagement; and (r =.41 for violent behavior and school disengagement. All correlations were significant at p<.05.

Latent Profile Analyses revealed that in the presence of adversity different adjustment profiles were observed among youth in Guatemala. Based on model fit statistics a five-group solution also was chosen in this sample. Although the VLMR - LRT test comparing the five-class model to the four-class model fell short of significance (p< .05), the five-class model fit the data better than models specifying fewer classes based on the other fit indices (see Table 10). Furthermore, the five profile classification provided a highly interpretable solution (See Fig 5), where five distinctive groups were identified.

Table 8.

Associations Among Latent Class Membership, Covariates, and Correlates for the Medellin Sample

	Excess Vs HI [a]	Excess Vs Resl	Excess Vs Viol	Excess Vs Multi	Resl Vs HI	Resl Vs Viol	Resl Vs Multi	HI Vs Viol	HI Vs Multi	Viol Vs Multi
Covariates										
Sex [b]	**1.92**	1.19	-0.07	0.51	0.74	**-1.26**	**-0.68**	**-1.99**	**-1.42**	-0.58
	1.1.- 2.9	.43 -2.17	-.97 - 1.0	-.27 -1.4	.41 -1.1	-1. -(-.68)	-1.14 -(-.26)	-2.7-(-1.4)	-1.8-(-1.05)	-1.34 - .04
Age	-0.15	**-0.22**	-0.07	-0.12	0.07	0.15	0.09	0.08	0.03	0.05
	-.33 -02	-.42-(-.04)	-.29 -.13	-.31-.04	-.02 - .15	.02-.30	-.01 -.20	-.05- 0.2	-.05 - .12	-.08 - .20
Adjustment Correlates										
Personal belief in God	0.08	**0.14**	0.05	0.03	-0.05	-0.08	**-0.11**	-0.023	-0.05	0.02
	-.04-.19	.01 - .25	-.09 - .21	-.10 -.15	-.13-.01	-.21-.06	-.20-(-.01)	-.15 - .12	-.13 -.03	-.10-.17
Prosocial Behavior	**0.14**	**0.15**	**0.12**	**0.09**	-0.01	-0.03	-0.05	-0.02	-0.04	0.02
	.07 -.23	.07 -.24	.04 -.21	.02-.18	-.04-.03	-.09 -.02	-.11 -0.0	-.08 -.03	-.09 - .01	-.04-.08
Family Cohesion	**0.07**	**0.12**	**0.09**	0.04	**-0.05**	-0.02	**-0.08**	0.03	-0.03	0.06
	.02 -.11	.07 -.17	.03 -.16	-.03-.09	-.08-(-.02)	-.07-.03	-.11 -(-.04)	-.02 - .09	-.06 - .01	.01-.12
Relationship with teacher	-0.06	-0.04	**-0.11**	-0.09	-0.02	-0.07	**-0.06**	-0.05	-0.04	-0.01
	-.14 -.03	-.13 - .06	-.22 -.00	-.02-.01	-.05-.01	-.15 -.01	-.12- (-.01)	-.13-.01	-.10-.01	-.10 - .06

Note. Significant estimates are in bold print. 95% confidence intervals are presented below each estimate. Models used multinomial logistic regression and adjust for all covariates and correlates. Excess= Excessive problem behavior; HI = high internalizing; Resl= Resilient; Viol= violent; Multi=multiple issues.
[a] The first class is the reference group. [b] sex was coded 0= male, 1=female. The reference group was male.

Table 9.

Covariate Percentages and Protective Factor Means by Latent Class Membership for the Medellin Sample

	Excessive problem behavior		High internalizing		Resilient		Violent		Multiple problems	
	n	% †	n	%	N	%	N	%	N	%
Sex										
Boys	28	6.8%	127	30.8%	110	26.7%	52	12.6%	95	23.1%
Girls	10	1.8%	334	60.2%	134	24.1%	18	3.2%	59	10.6%
	M	SD	M	SD	M	SD	M	SD	M	SD
Age	14.5	1.70	14.04	1.94	13.59	2.24	14.27	1.99	14.15	1.64
Protective Factors										
Personal belief in God	12.23	2.49	13.21	2.26	13.59	1.98	13.04	2.40	12.73	2.66
Prosocial Behavior	18.23	5.58	22.52	4.63	23.16	4.75	21.15	4.46	20.55	4.97
Family Cohesion	23.63	6.86	27.74	6.45	30.18	5.17	28.73	5.42	26.18	5.49
Relationship with Teacher	5.36	4.63	5.70	4.26	6.57	4.33	4.78	3.75	4.62	3.87

† indicates percentage of the full sample (N = 967). ANOVAs were used to reflect unadjusted means.

Adolescents in group 1 (N=414) scored about 1*SD* above the mean in depression and school disengagement, but around the mean in violent behavior. This group was labeled as "depressed disengaged." Adolescents in group 2 (N=1626) scored below the mean, and lower that all other groups across all three domains. Although this group is doing well, values don't reach the 1*SD* below the mean criteria here established for resiliency. This group was labeled as "holding steady." Adolescents in group 3 (N=85) scored 2 *SD* above the mean in terms of school disengagement, and about 1SD above the mean in depression and violent behavior. This group was labeled as "Multiple Problems." Adolescents in group 4 (N=276) scored 1*SD* above the mean in the violent behavior domain, and around the mean in depression and school

disengagement, they were labeled as "Violent." Lastly, Adolescents in group 5 (*N*=69) scored almost 4 *SD* in terms of violent behavior, and above 1 *SD* in school disengagement. This group was labeled as "Extremely Violent."

Predictive Effect of Protective Factors: Guatemala

Logistic Multivariate Regression Analysis was used to determine the extent to which known protective factors predicted the likelihood of group membership in any of the five profiles of adjustment identified. The model provide estimates for each variables after controlling for the effects of the other variables. Positive estimates indicate higher likelihood of class membership relative to the reference group, and negative estimates indicate lower likelihood. As seen in Table 11, covariates and adjustment correlates did predict differences in group membership. Compared to the violent, the extremely violent, the depressed-disengaged, and the multiple problems groups, more girls than boys were classified in the holding steady group. Similarly, compared to the violent, the extremely violent, the depressed-disengaged, and the multiple problems groups, younger youth, youth with higher levels of a personal belief in God and youth with higher levels of family cohesion were more likely to be classified as holding steady. Support from others and positive relationship with teachers also predicted differences in group classification.

Lastly, Table 12 offers a detailed description of sex distribution and means values for predictor variables in each group.

Table 10.

Model Fit Statistics for Latent Class Analyses Models Specifying One To Five Classes

Guatemala

	Number of Classes				
	1	2	3	4	5
Loglikelihood Information criteria	-10494.88	-9997.11	-9785.39	-9616.05	-9552.19
N of free parameters	6	10	14	18	22
AIC	21001.77	20014.23	19598.79	19268.11	19148.38
BIC	21036.64	20072.35	19680.16	19372.73	19276.24
Sample Size Adjusted BIC	21017.58	20040.58	19635.68	19315.54	19206.34
Entropy	na	0.91	0.79	0.83	0.81
Lo, Mendell, Rubin Test (Tech 11)	na	- 10494.88 p < .001	-9997.11 p = 0.10	-9746.58 p < .05	-9616.05 p < .05
Bootstrapping (Tech 14)	na	-10494.88 p < .0001	-9997.11 p < .001	-9746.58 p < .0001	-9616.05 p < .0001
N for each class (Based on most likely classification)	C1 = 2470	C1 = 2220 C2 = 249	C1 = 1837 C2 = 518 C3 = 114	C1 = 1751 C2 = 68 C3 = 340 C4 = 309	C1 = 414 C2 = 1626 C3 = 85 C4 = 276 C5 =69

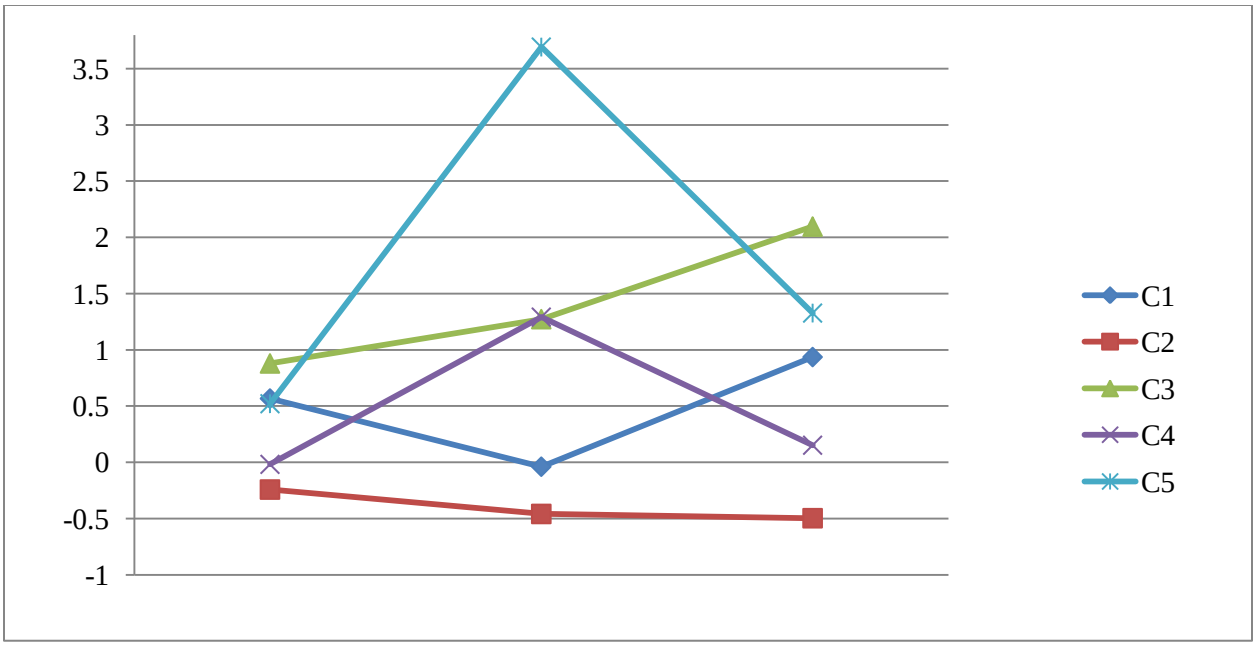

Figure 5. Adjustment profiles among youth in Guatemala. DEP = depression; VIOL= engagement in violent behavior; DISENG= school disengagement.

Adjustment Profiles: Chicago Wave 2

Correlations among the four indicators included in the latent profile analysis were (r = .48) for internalizing and externalizing; (r =-.38) for internalizing and self efficacy; (r = -.10) for internalizing and health status; (r = -.33) for externalizing and self efficacy; (r = -.03) for externalizing and health status; and (r = .15) for self efficacy and health status . All correlations were significant at p<.05.

At wave 2 for the Chicago sample, Latent Profile Analyses revealed that in the presence of adversity different adjustment profiles are observed among youth in Chicago. Based on model fit statistics a four-group solution was chosen., the four-class model fit the data better than models specifying fewer classes (see Table 13). Furthermore, the four profile classification

provided a highly interpretable solution (See Fig. 6), where four distinctive groups were identified.

Adolescents in group 1 (*N*=113) scored around the mean in internalizing symptoms, externalizing problem behavior and self efficacy, but they scored about 1*SD* below the mean in health. This group was labeled as "poor health." Adolescents in group 2 (*N*=86) scored about 1 *SD* above the mean in health, internalizing and externalizing domains but low in self efficacy. This group was labeled as "problem behavior." Adolescents in group 3 (*N*=37) scored 1 *SD* above the mean in terms of internalizing and externalizing domains, and about 1*SD* below the mean in self efficacy and health. This group was labeled as "Multiple Problems." Lastly, Adolescents in group 4 (*N*=255) scored around the mean in all domains. This group was labeled as "holding steady."

Table 11.

Associations Among Latent Class Membership, Covariates, and Correlates for the Guatemala Sample

	Extm Vs DD [a]	Extm Vs HS	Extm Vs Multi	Extm Vs Viol	HS Vs DD	HS Vs Multi	HS Vs Viol	Viol Vs Multi	Viol Vs DD	Multi Vs DD
Covariates										
Sex [b]	1.54	**1.88**	0.34	0.11	**-0.39**	**-1.54**	**-1.81**	0.23	**1.43**	**1.21**
	.97 - 2.38	1.32 -2.7	-.52 -1.25	- .59 -.91	-57- (-.11)	-2.19- (-1.04	-2.15- (-1.46)	-.46 -.84	1.07-1.86	.69 - 1.8
Age	**-0.25**	**-0.27**	-0.12	-0.14	0.02	**0.15**	**0.12**	0.02	**-0.11**	-0.13
	-.42-(-.09)	-.44-(-.12)	-.31 - .08	-.31 -.03	-.05- .08	.01-.29	.06-.26	-.13-.17	-.21- (-.03)	-.28-.05
Adjustment Correlates										
Personal Belief in God	-.03	**-0.15**	.03	-0.06	0.01	0.07	-0.01	0.07	0.02	-0.06
	-.12 - .06	-.23-(-.05)	-.08 -.14	-.15 -.05	-.17-(-.07)	-.24-(-.08)	-.06-.05	-.03 -.17	-.05-.08	-.15-.04
Family Cohesion	0.03	**0.13**	-0.00	0.06	**-0.09**	**-0.18**	**-0.07**	**-0.10**	-0.02	**0.08**
	-.02 - .09	.07- .18	-.12-.02	-.02 - .11	-.12-(-.07)	-.22- (-.14)	-.10- (-.04)	-.15-(-.06)	-.05 - .01	.04-.13
Relationship with teacher	0.05	**0.08**	-0.04	0.06	**-0.04**	**-0.13**	-0.03	**-0.09**	0.01	**0.09**
	-.02 - .14	.01- .17	-.15 - .08	-.03 - .15	-.06-.01	-.20-(-.04)	-.07-.01	-.18- (-.01)	-.05- .05	.01-.18
Support from others	0.13	0.21	0.20	0.17	**-0.10**	-0.04	-0.04	0.03	-0.04	-0.07
	-.07 - .36	.01 -.43	-.04 - .45	-.04 -.41	-.17 -(-.01)	-.18-.12	-.13-.04	-.16-.17	-.15-.06	-.22- .10

Note. Significant estimates are in bold print. 95% confidence intervals are presented below each estimate. Models used multinomial logistic regression and adjust for all covariates and correlates. Extm= extremely violent; DD = depresses disengaged; HS= holding steady; Multi=multiple issues; Viol= violent.
a The first class is the reference group. b sex was coded 0= male 1=female reference group was male.

Table 12.

Covariate Percentages and Protective Factor Means by Latent Class Membership for the Guatemala Sample

	Extremely Violent		Depressed Disengaged		Holding Steady		Violent		Multiple problems	
	n	% †	n	%	n	%	n	%	n	%
Sex										
Boys	58	4.2%	224	16.3%	797	57.9%	232	16.8	66	4.8%
Girls	11	1.0%	190	17.4%	829	75.8%	44	4.0%	19	1.7%
	M	SD	M	SD	M	SD	M	SD	M	SD
Age	15.98	1.53	15.29	1.65	15.25	1.69	15.64	1.52	15.61	1.53
Protective Factors										
Personal belief in God	12.02	2.41	11.65	2.57	10.87	1.8	11.51	2.42	12.34	2.8
Support from others	2.23	1.45	2.62	1.49	3.14	1.69	2.83	1.62	2.49	1.41
Family Cohesion	14.22	5.62	14.91	5.48	17.77	4.89	16.32	5.00	12.89	5.10
Relationship with Teacher	5.93	3.22	6.89	3.34	7.81	3.38	6.82	3.28	5.44	3.37

† indicates percentage of full sample (n = 410). ANOVA analyses were use to reflect unadjusted means

Table 13.

Model Fit Statistics for Latent Class Analyses Models Specifying One To Five Classes Chicago W2

	Number of Classes				
	1	2	3	4	5
Loglikelihood Information criteria	-2649.34	-2542.96	-2520.32	-2480.05	-2473.08
N of free parameters	8	13	18	23	28
AIC	5314.68	5111.92	5076.65	5006.11	5002.16
BIC	5348.26	5166.48	5152.19	5102.63	5119.66
Sample Size Adjusted BIC	5322.87	5125.21	5095.06	5029.63	5030.79
Entropy	Na	0.73	0.63	0.79	0.80
Lo, Mendell, Rubin Test (Tech 11)	Na	-2649.34 p < .001	-2542.96 p = .061	2520.32 p < .001	-2480.05 p = .3528
Bootstrapping (Tech 14)	Na	-2649.34 p < .0001	-2542.96 p < .0001	-2520.32 p < .0001	-2480.05 p=.11
N for each class (Based on most likely classification)	C1 = 491	C1 = 371 C2 = 119	C1 = 55 C2 = 252 C3 = 182	C1 = 113 C2 = 86 C3 = 37 C4 = 255	C1 = 107 C2 = 16 C3 = 90 C4 = 238 C5 =37

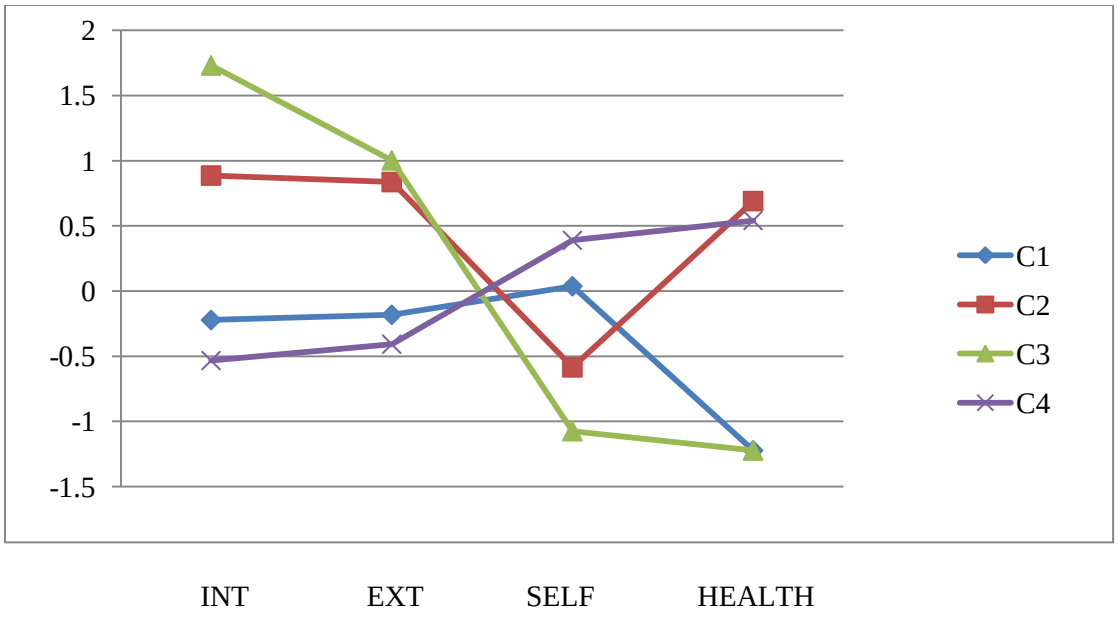

Figure 6. Adjustment profiles among youth in Chicago at wave 2. INT = internalizing problems; EXT= externalizing problems; SELF= self efficacy; HEALTH= health status.

Predictive Effect of Protective Factors: Chicago Wave 2

Logistic Multivariate Regression Analysis was used to determine the extent to which known protective factors predicted the likelihood of group membership in any of the four profiles of adjustment identified. The model provide estimates for each variables after controlling for the effects of the other variables. Positive estimates indicate higher likelihood of class membership relative to the reference group, and negative estimates indicate lower likelihood. As seen in Table 14, covariates did not predict differences in group membership for the Chicago sample at wave 2. Regarding protective factors at the individual level, educational expectations, intelligence, and engagement in constructive activities predicted classification in the holding steady group over other groups. Intelligence in particular seems to be a strong predictor for the classification in the holding steady group (See Table 15). Regarding protective

factors in the family, school, or peer domains, none of the variables included as protective factors in Table 16 emerged as significant predictors for differences in group membership.

Lastly, Table 17 offers a detailed description of the distribution of sex across groups and mean values of the protective factors in each group identified at wave 2 for the Chicago sample.

Table 14.

Associations Among Latent Class Membership and Covariates for the Chicago Sample at Wave 2

Covariates	HS Vs PH [a]	HS Vs PB	HS Vs Multi	PB Vs PH	PB Vs Multi	PH Vs Multi
Sex [b]	-0.08	0.55	0.12	-0.59	-0.39	0.19
	-0.53 - 0.39	0.06- 1.07	-0.72 - 0.87	-1.17- 0.04	-1.25- 0.43	-0.64- 1.01
Age	-0.09	0.03	0.07	-0.04	0.04	0.08
	-0.15- 0.14	-0.13- .19	-0.18 - 0.32	-0.21 - 0.13	-0.23-0.29	-0.18- 0.35
Hispanic	1.22	0.58	1.57	0.60	0.95	0.35
	0.61- 1.92	-0.01- 1.28	0.58 - 3.18	-0.18 - 1.43	-0.23-2.73	-0.84-2.15
Black	0.35	-0.31	0.45	0.68	0.77	0.09
	-0.25 - 1.05	-0.93- 0.42	-0.58 - 2.13	-0.14- 1.58	-0.42-2.55	-1.11-1.90
Family	0.24	-0.05	1.32	0.24	1.31	1.08
Welfare	-0.23- 0.78	-0.60-0.47	0.58 - 2.11	-0.44- 0.93	0.45-2.23	0.31- 1.92

Note. Significant estimates are in bold print. 95% confidence intervals are presented below each estimate. Models used multinomial logistic regression and adjust for all covariates and correlates. PH= poor health; PB = problem behavior; Multi=multiple issues; HS = holding steady

a The first class is the reference group. b sex was coded 0= male 1=female reference group was male.

Adjustment Profiles: Chicago Wave 3

Correlations among the four indicators included in the latent profile analysis were (r = .49) for internalizing and externalizing; (r =-.26) for internalizing and self efficacy; (r = -.10) for internalizing and health status; (r = -.27) for externalizing and self efficacy; (r = -.09) for externalizing and health status; and (r = .12) for self efficacy and health status . All correlations were significant at p<.05.

At wave 3 for the Chicago sample, Latent Profile Analyses revealed that in the presence of adversity different adjustment profiles were observed among youth in Chicago. Based on model fit statistics a four-group solution was chosen. The four-class model fit the data better than models specifying fewer classes (see Table 18). Furthermore, the four profile classification provided a highly interpretable solution (See Fig 7), where four distinctive groups were identified.

Table 15.

Associations Among Latent Class Membership and Individual correlates for the Chicago Sample at Wave 2

	HS Vs PH [a]	HS Vs PB	HS Vs Multi	PB Vs PH	PB Vs Multi	PH Vs Multi
Individual Correlates						
Educational Expectations	-0.08 -0.25- 0.08	-0.03 -0.20 - 0.17	**-0.25** -0.49-(-0.03)	-0.04 -0.27- 0.14	-0.21 -0.51- 0.04	-0.16 -0.38- 0.08
Positive Demeanor	0.01 -0.13- 0.17	-0.05 -0.23- 0.11	0.04 -0.20- 0.36	0.07 -0.14- 0.25	0.10 -0.19- 0.43	0.03 -0.22- 0.32
Intelligence	**-0.12** -0.21- (-0.04)	**-0.12** -0.22- -0.01	**-0.28** -0.46-(-0.15)	-0.09 -0.11- 0.09	-0.16 -0.34- -0.03	-0.15 -0.32- -0.01
Activities	**-0.11** -0.21 - (-0.02)	0.01 -0.11- 0.11	-0.16 -0.35-(-0.03)	-0.11 -0.22- 0.02	-0.16 -0.36- 0.01	-0.05 -0.25- 0.09

Note. Significant estimates are in bold print. 95% confidence intervals are presented below each estimate. Models used multinomial logistic regression and adjust for all covariates and correlates. PH= poor health; PB = problem behavior; Multi=multiple issues; HS = holding steady.

a The first class is the reference group.

Table 16.

Associations Among Latent Class Membership and Contextual Correlates for the Chicago Sample at Wave 2

	HS Vs PH [a]	HS Vs PB	HS Vs Multi	PB Vs PH	PB Vs Multi	PH Vs Multi
Contextual Correlates						
Family Involvement	-0.02 -0.16 - 0.12	-0.06 -0.20-0.06	0.12 -0.08-0.34	0.05 -0.10-0.27	0.18 -0.01- 0.423	0.14 -0.06 - 0.40
Father presence	0.13 -0.29-0.61	0.28 -0.23-0.81	-0.27 -1.05-0.46	-0.15 -0.78 - 0.45	-0.55 -1.39 - 0.23	-0.40 -1.27 - 0.37
Prosocial peers	0.01 -0.06-0.07	-0.02 -0.08-0.04	-0.07 -0.15-0.01	0.02 -0.04-0.09	-0.053 -0.14 - 0.03	-0.08 -0.16 - 0.01
School attachment	-0.12 -0.42-0.17	-0.19 -0.59-0.14	-0.15 -0.55-0.24	0.07 -0.30-0.49	0.04 -0.43 - 0.50	-0.03 -0.43 - 0.33
Relationship with Teacher	0.15 -0.16-0.46	-0.05 -0.37-0.32	-0.04 -0.51-0.46	0.20 -0.24- 0.55	0.01 -0.52 - 0.56	-0.19 -0.70 - 0.32

Note. Significant estimates are in bold print. 95% confidence intervals are presented below each estimate. Models used multinomial logistic regression and adjust for all covariates and correlates. PH= poor health; PB = problem behavior; Multi=multiple issues; HS = holding steady;
a The first class is the reference group.

Table 17.

Covariate Percentages and Protective Factor Means by Latent Class Membership for the Chicago Sample at Wave 2

	Poor Health		Problem Behavior		Multiple Problems		Holding Steady	
	N	% †	N	%	N	%	n	%
Covariates								
Boys	70	24.3%	42	14.6%	20	7%	156	54.2%
Girls	43	21.2%	44	21.7%	17	8.4%	99	48.8%
Black	45	20.9%	29	13.5%	16	7.4%	125	58.1%
Hispanic	52	30.6%	37	21.8%	17	10%	64	37.6%
Family welfare	31	23%	20	15%	19	14%	65	48%
	M	SD	M	SD	M	SD	M	SD
Age	12.50	1.58	12.64	1.64	12.64	1.78	12.59	1.62
Individual Protective Factors								
Educational Expectations	5.90	1.39	6.09	1.22	5.50	1.68	6.21	1.09
Positive demeanor	-.01	1.48	-.14	1.61	-.10	1.40	.07	1.51
Intelligence	6.77	2.44	6.77	3.06	5.54	2.39	7.74	2.84
Prosocial activities	3.16	2.14	3.74	2.43	2.81	2.01	3.75	2.38
Contextual Protective Factors								
Family Involvement	6.87	1.49	6.63	1.47	7.05	1.48	7.11	1.28
Prosocial peers	13.80	2.86	13.18	2.44	12.53	2.50	14.21	2.92
School attachment	3.12	.66	3.05	.82	3.02	.60	3.16	.71
Relationship with Teacher	3.24	.70	3.12	.80	3.10	.77	3.18	.79

† indicates percentage of full sample (n = 491). ANOVA analyses were use to reflect unadjusted means

Table 18.

Model Fit Statistics for Latent Class Analyses Models Specifying One To Five Classes Chicago W3

	Number of Classes				
	1	2	3	4	5
Loglikelihood Information criteria	-1959.09	-1892.71	-1870.949	-1854.579	-1842.334
N of free parameters	8	13	18	23	28
AIC	3934.18	3811.43	3777.90	3755.16	3740.67
BIC	3966.31	3863.64	3850.19	3847.53	3853.12
Sample Size Adjusted BIC	3940.92	3822.38	3793.07	3774.55	3764.27
Entropy	na	0.65	0.62	0.63	0.64
Lo, Mendell, Rubin Test (Tech 11)	na	-1959.09 p < .001	-1892.71 p = . 0390	-1870.95 p = .1876	-1854.58 p = .7858
Bootstrapping (Tech 14)	na	-1959.09 p < .0001	-1892.71 p < .0001	-1870.95 p < .0001	-1854.58 p < .0001
N for each class (Based on most likely classification)	C1 = 491	C1 = 298 C2 = 111	C1 = 170 C2 = 206 C3 = 33	C1 = 144 C2 = 109 C3 = 24 C4 = 133	C1 = 121 C2 = 113 C3 = 39 C4 = 111 C5 =22

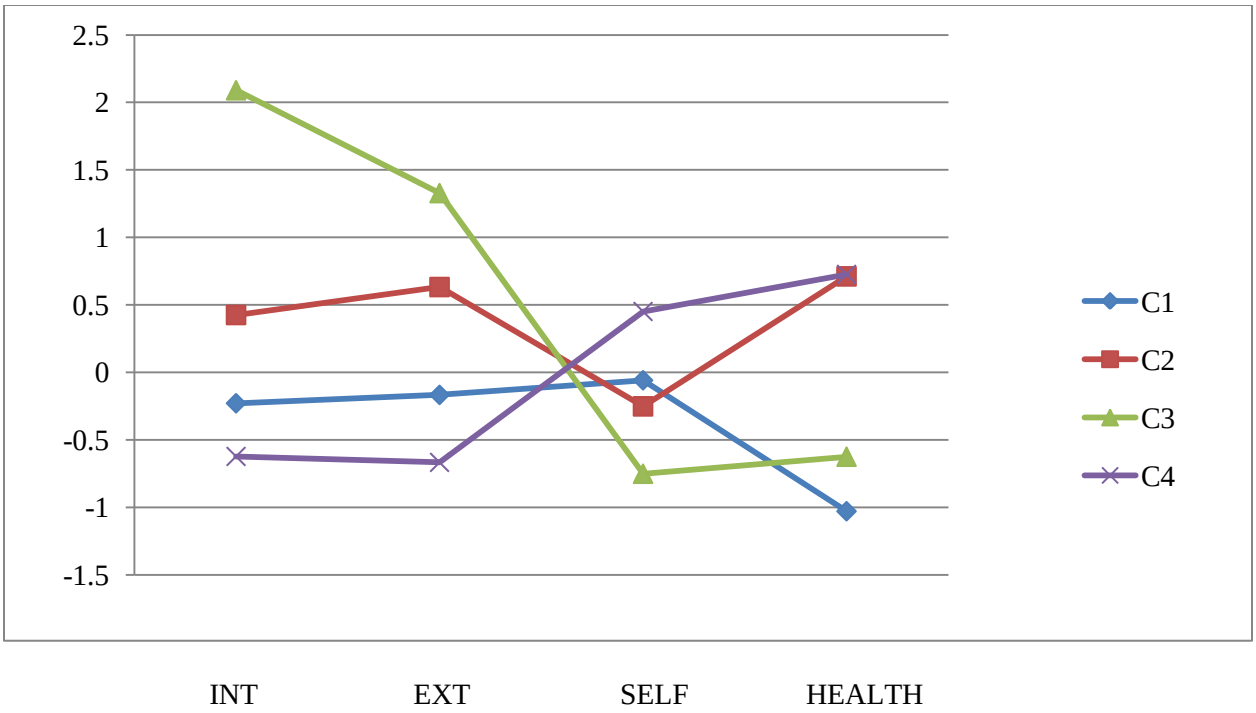

Figure 7. Adjustment profiles among youth in Chicago at wave 3. INT = internalizing problems; EXT= externalizing problems; SELF= self efficacy; HEALTH= health status.

Adolescents in group 1 (*N*=144) scored around the mean in internalizing, externalizing and self efficacy, but they scored about 1*SD* below the mean in health. This group was labeled as "poor health." Adolescents in group 2 (*N*=109) scored above the mean in terms of internalizing and externalizing domains, around the mean in terms of self efficacy and close to 1 *SD* above the mean in health status. This group was labeled as "problem behaviors." Adolescents in group 3 (*N*=24) scored 2 *SD* above the mean in terms of internalizing symptoms, the highest and 1 *SD* above the mean in the externalizing domain and below the mean in self efficacy and health status. This group was labeled as "multiple problems." Lastly, Adolescents in group 4 (*N*=133) scored the lowest and below the mean in internalizing and externalizing domains and the highest

and above the mean in self efficacy and health status. This group was labeled as "holding steady."

Predictive Effect of Protective Factors: Chicago Wave 3

Logistic Multivariate Regression Analysis was used to determine the extent to which known protective factors predicted the likelihood of group membership in any of the four profiles of adjustment identified. The model provide estimates for each variables after controlling for the effects of the other variables. Positive estimates indicate higher likelihood of class membership relative to the reference group, and negative estimates indicate lower likelihood. As observed at wave 2, covariates did not predict differences in group membership for the Chicago sample at wave 3 (See Table 19). Regarding protective factors at the individual level, intelligence was the only identified protective factor predicting differences in group classification (See Table 20). Higher levels of verbal intelligence favored classification in the holding steady group over classification in the poor health and multiple problems groups.

Regarding protective factors at the contextual level, prosocial peers was the only significant predictor of differences in group classification (See Table 21). Youth who had more friends involved in prosocial behavior were more likely to be classified into the holding steady group over the poor health and problem behavior groups. Lastly, Table 22 offers a detailed description of distribution of sex across groups and mean values of the protective factors in each group identified at wave 3 for the Chicago sample.

Table 19.

Associations Among Latent Class Membership and Covariates for the Chicago Sample at Wave 3

	HS Vs PH [a]	HS Vs PB	HS Vs Multi	PB Vs PH	PB Vs Multi	PH Vs Multi
Covariates						
Sex [b]	0.36	0.42	1.57	-0.07	1.14	1.22
	-0.18 -0.88	-0.11 -0.97	0.60-2.74	-0.58-0.46	0.17-2.46	0.26-2.35
Age	**0.17**	0.06	0.11	0.11	0.05	-0.061
	0.02-0.34	-0.10-0.24	-0.20-0.42	-0.04-0.28	-0.27-0.37	-0.38-0.26
Hispanic	1.02	0.35	0.54	0.67	0.19	-0.47
	0.34-1.73	-0.38-1.13	-0.59-1.99	-0.05-1.40	-1.03-1.7	-1.60-1.06
Black	0.59	0.53	0.18	0.07	-0.34	-0.41
	-0.05 - 1.28	-0.09-1.23	-1.04-1.92	-0.63-0.77	-1.65-1.36	-1.77-1.31
Family	0.48	0.43	0.55	0.06	0.13	0.06
Welfare	-0.15-1.1	-0.22-1.07	-1.08-1.64	-0.54-0.70	-1.47-1.21	-1.54-1.12

Note. Significant estimates are in bold print. 95% confidence intervals are presented below each estimate. Models used multinomial logistic regression and adjust for all covariates and correlates. PH= poor health; PB = problem behavior; Multi=multiple issues; HS = holding steady.
a The first class is the reference group. b sex was coded 0= male 1=female reference group was male.

Table 20.

Associations Among Latent Class Membership and Individual Correlates for the Chicago Sample at Wave 3

	HS Vs PH [a]	HS Vs PB	HS Vs Multi	PB Vs PH	PB Vs Multi	PH Vs Multi
Individual Correlates						
Future orientation	0.21 -0.13-0.59	0.33 -0.08-0.74	0.25 -0.48-0.89	-0.12 -0.46 -0.26	-0.071 -0.78-0.56	0.04 -0.68-0.62
Educational Expectations	-0.05 -0.22 - 0.11	0.08 -0.103-0.26	0.23 -0.13-0.78	-0.14 -0.31-0.04	0.14 -0.22 -0.71	0.28 -0.07-0.82
Positive Demeanor	-0.260 -0.58 -- 0.020	-0.21 -0.55-0.07	-0.17 -0.57-0.35	-0.05 -0.30-0.16	0.04 -0.30- 0.53	0.09 -0.23-0.61
Intelligence	**-0.07** -0.13- (-0.03)	-0.04 -0.11-0.02	**-0.15** -0.29-(-0.03)	-0.02 -0.09-0.04	-0.10 -0.24 - 0.02	-0.08 -0.21- 0.04
Activities	-0.01 -0.04 - 0.08	-0.01 -0.03-0.01	-0.03 -0.07-0.01	-0.01 -0.03-0.02	-0.02 -0.06-0.02	-0.01 -0.06-0.03
Religion	0.02 -0.26 - 0.27	-0.08 -0.37-0.21	-0.05 -0.55-0.51	0.10 -0.19-0.36	0.02 -0.51-0.60	-0.08 -0.54-0.49

Note. Significant estimates are in bold print. 95% confidence intervals are presented below each estimate. Models used multinomial logistic regression and adjust for all covariates and correlates. PH= poor health; PB = problem behavior; Multi=multiple issues; HS = holding steady. The first class is the reference group.

Table 21.

Associations Among Latent Class Membership and Contextual Correlates for the Chicago Sample at Wave 3

	HS Vs PH [a]	HS Vs PB	HS Vs Multi	PB Vs PH	PB Vs Multi	PH Vs Multi
Contextual Correlates						
Family Support	-0.07 -0.17-0.01	0.01 -0.09-0.12	0.01 -0.12 - 0.22	-0.07 -0.18 -0.01	0.01 -0.14 -0.20	0.07 -0.03 -0.28
Prosocial peers	**-0.09** -0.21- (-0.03)	**-0.11** -0.23- (-0.03)	-0.09 --0.25-0.04	0.014 -0.05-0.08	0.01 -0.12-0.16	0.00 -0.14-0.14
School attachment	0.08 -0.29-0.45	-0.06 -0.48-0.36	0.15 -0.70-0.90	0.15 -0.24 -0.52	0.22 --0.61-1.03	0.07 -0.76-0.88
Relationship with Teacher	-0.15 -0.51-0.18	-0.06 -0.44-0.28	-0.52 -1.24-0.28	-0.09 -0.43-0.26	-0.46 -1.18-0.31	-0.37 -1.09-0.41

Note. Significant estimates are in bold print. 95% confidence intervals are presented below each estimate. Models used multinomial logistic regression and adjust for all covariates and correlates. PH= poor health; PB = problem behavior; Multi=multiple issues; HS = holding steady;
a The first class is the reference group.

Table 22.

Covariate Percentages and Predictor Variable Means by Latent Class Membership for the Chicago Sample at Wave 3

	Poor Health		Problem Behavior		Multiple Problems		Holding Steady	
	N	% †	N	%	n	%	N	%
Covariates								
Boys	83	34.6%	61	25.4%	7	2.9%	89	37.1%
Girls	61	35.9%	48	28.2%	17	10%	44	25.9%
Black	84	36.2%	54	23.3%	14	6%	80	34.5%
Hispanic	83	31.1%	77	28.8.%	15	5.6%	92	34.5%
Family welfare	34	38.2%	27	30.3%	6	6.7%	22	24.7%
	M	SD	M	SD	M	SD	M	SD
Age	15.20	1.6	14.95	1.66	15.07	1.64	14.83	1.51
Individual Protective Factors								
Future Orientation	2.01	.61	2.03	.66	2.00	.58	1.95	.60
Educational Expectations	5.76	1.36	5.80	1.24	5.92	1.31	6.08	.99
Positive demeanor	-.25	1.8	-.09	1.6	.01	1.2	.29	1.32
Intelligence	7.20	2.55	7.58	2.54	7.40	2.64	8.34	2.60
Prosocial activities	21.17	8.00	18.86	6.52	20.08	7.79	20.61	5.38
Belief in God	3.25	.87	3.24	.80	3.13	.89	3.32	.79
Contextual Protective Factors								
Family Support	13.24	2.26	13.62	1.98	13.37	1.86	13.47	2.23
Prosocial peers	14.31	2.45	13.46	2.77	13.21	2.49	15.46	2.52
School attachment	3.014	.59	2.75	.72	2.62	.87	3.11	.64
Relationship with Teacher	3.15	.73	2.93	.85	2.58	1.13	3.34	.61

†indicates percentage of full sample (n = 410). ANOVA analyses were use to reflect unadjusted means

Missing Data Analyses in the Chicago Dataset

The majority of the population (N = 410; 83.5%) had the information needed for profile classification at wave 3 for the Chicago dataset. Approximately 13% of youth from the poor health and multiple issues groups were missing at wave 3, whereas the problem behavior and holding steady groups lost about 18% of their cases. Attrition analyses revealed that youth missing data at wave 3 compared with youth who had data available scored similarly (no significant differences) on all variables of interest. However, youth missing data at wave 3 were

significantly older at wave 2 (*M*= 13.28, *SD*= 1.55) than the group of youth with wave 3 data (*M*= 12.44, *SD*= 1.60).

Longitudinal Contributions of Protective Factors

Next, a longitudinal framework was used to evaluate the stability of the predictive value of protective factors from wave 2 to wave 3.

Logistic Multivariate Regression Analysis was used to determine the extent to which individual and contextual correlates from wave 2 predicted the likelihood of group membership in any of the four profiles of adjustment identified at wave 3. The model provide estimates for each variables after controlling for the effects of the other variables, variables available only at wave 3 were also included in the model. Positive estimates indicate higher likelihood of class membership relative to the reference group, and negative estimates indicate lower likelihood. Regarding protective factors at the individual level, intelligence and engagement in prosocial activities at wave 2 favored classification in the holding steady group over classification in the poor health group at wave 3 (See Table 23).

Regarding protective factors at the contextual level, relationship with the teacher was the only significant predictor of differences in group classification (See Table 24). Youth who got along better with their teachers at wave 2 were more likely to be classified into the holding steady group over the problem behavior group at wave 3.

Lastly a comprehensive model was run including individual and contextual predictors from either wave 2 or wave 3, proven relevant for the prediction of group membership at wave 3 in the analyses previously described. Youth age at wave 3 and sex were included as covariates. As seen in Table 25, number of peers engaged in prosocial activities predicted membership in the holding steady group over the problem behavior group, whereas, intelligence and engagement in

constructive activities at wave 2 predicted membership in the problem behavior over the poor health group.

Table 23.

Associations Among Wave 3 Chicago Latent Class Membership and Individual-Level Correlates

Individual Correlates	HS Vs PH [a]	HS Vs PB	HS Vs Multi	PB Vs PH	PB Vs Multi	PH Vs Multi
Future orientation	0.07 -.29- .45	0.29 -.10- .73	0.30 -.32- .86	-0.22 -.63-.16	0.01 -.65-.60	0.23 -.38-.83
Educational Expectationsw2	0.07 -.12- .27	0.01 -.19- .19	-0.10 -.38-.37	0.06 -.12-.25	-0.10 -.37-.35	-0.20 -.46-.32
Positive Demeanor w2	-0.01 -.21- .18	-0.03 -.22- .16	-0.08 -.38-.26	0.01 -.15-.19	-0.06 -.35-.27	-0.07 -.39-.28
Intelligence w2	**-0.1** -.20- (-.03)	-0.06 -.16 - .03	-0.05 -.23-.12	-0.05 -.16- .03	0.01 -.17-.18	0.06 -.12-.24
Activities w2	**-0.11** -.22- (-.01)	-0.05 -.18 -.06	0.03 -.20-.23	-0.06 -.18- .06	0.08 -.15-.29	0.14 -.08-.33
Religion	-0.04 -.31- .21	-0.07 -.35 -.21	-0.04 -.44-.45	0.03 -.24-.29	0.02 -.38-.49	-0.01 -0.42-.44

Note. Significant estimates are in bold print. 95% confidence intervals are presented below each estimate. Models used multinomial logistic regression and adjust for all covariates and correlates. PH= poor health; PB = problem behavior; Multi=multiple issues; HS = holding steady. The first class is the reference group.

Table 24.

Associations Among Latent Class Membership and Contextual Correlates for the Chicago Sample at Wave 3

	HS Vs PH [a]	HS Vs PB	HS Vs Multi	PB Vs PH	PB Vs Multi	PH Vs Multi
Contextual Correlates						
Family Support	-0.07 -.15-.01	0.01 -.09-.12	0.02 -.11-.17	-0.08 -.19 -.01	-0.07 -.13-.17	0.07 -.03-.23
Prosocial peers w2	-0.03 -.11-.02	-0.02 -.09-.05	-0.05 -.14-.05	-0.02 -.08-.04	-0.04 -.13-.07	-0.02 -.10-.08
School attachment w2	-0.17 -.61-.17	-0.12 -.52-.27	0.24 -.52- 1.16	-0.05 -.45-.28	0.36 -.41-1.30	0.41 -.30-1.38
Relationship wit Teacher w2	-0.06 -.41-.33	**-0.36** -.71-(-.02)	-0.17 -0.7-.44	0.31 -.06-.70	0.19 -.33-0.85	-0.11 -.71-.50

Note. Significant estimates are in bold print. 95% confidence intervals are presented below each estimate. Models used multinomial logistic regression and adjust for all covariates and correlates. PH= poor health; PB = problem behavior; Multi=multiple issues; HS = holding steady;
a The first class is the reference group.

Table 25.

Associations Among Wave 3 Chicago Latent Class Membership, Covariates, Individual and Contextual-Level Correlates

	HS Vs PH [a]	HS Vs PB	HS Vs Multi	PB Vs PH	PB Vs Multi	PH Vs Multi
Covariates/ Correlates						
Sex	-.07 -.65-.43	-.52 -1.12-.01	1.15 .25-2.42	.44 -.04-.95	1.67 .73-3.05	1.22 .40-2.56
Age	.09 -.04-.26	-.03 -.18-.12	-.01 -.22-.28	.13 -.02-.28	.02 -.18 -.26	-.11 -.32-.17
Intelligence W2	-.04 -.11-.03	-.01 -.09-.06	-.10 -.24-.06	**-.02** -.10-.04	-.08 -.23-.06	-.06 -.21-.10
Intelligence W3	-.04 -.15-.05	.05 -.04-.15	.07 -.14-.26	-.09 -.19-(-.01)	.01 -.19-.19	.11 -.07-.30
Educational Expectations	.08 -.09-.28	.02 -.16-.21	-.13 -.41-.34	.06 -.13-.26	-.15 -.43-.29	-.21 -.52-.26
Activities W2	-.06 -.19-.06	.06 -.04-.18	.04 -.19-.24	**-.13** -.23 -(-.02)	-.02 -.24-.17	.10 -.12-.30
Peers 3	.04 -.02-.11	**.12** .04-.23	.01 -.08-.10	-.07 -.19-.01	-.10 -.25-.01	-.03 -.13-.07

Note. Significant estimates are in bold print. 95% confidence intervals are presented below each estimate. Models used multinomial logistic regression and adjust for all covariates and correlates. PH= poor health; PB = problem behavior; Multi=multiple issues; HS = holding steady. The first class is the reference group. b sex was coded 0= male 1=female reference group was male.

Transition Analyses

Lastly, a contingency table was produced to examine potential changes in class classification from wave 2 to wave 3. Analyses revealed that of the 410 youth with both wave 2 and wave 3 classifications, only 44% (*N*= 181) remained in the same class. Of the remaining youth, 17% (*N*= 71) moved from one problem group (poor health, problem behavior or multiple problems) to another; 10% (*N*= 41) moved from a problem group (poor health, problem behavior or multiple problems) to the holding steady group; and 29% (*N*=117) initially classified as

holding steady moved to a problem group. These changes were significant $X^2(9, N = 410) = 60.02, p < .001$.

Significant sex differences were observed among youth who transitioned from an initial classification of holding steady to a "problematic" classification. Two-thirds (65%) of girls initially classified as holding steady moved to another group, whereas only 50% of boys classified as holding steady in wave 2 changed their classification at wave 3. No significant differences in terms of age, race, or ethnicity were observed.

Significant differences also were observed across domains of adjustment among youth who remained in the “holding steady” group versus youth who transitioned out of the “holding steady” group (See Fig 8). Youth who remained steady scored lower in internalizing (*M*= - 0.69, *SD*= 0.58) and externalizing problems (*M*= - 0.80, *SD*= 0.51) than youth who lost their holding steady classification (*M*=0.14, *SD*= 0.94) for internalizing problems and (*M*=0.28, *SD*= 0.98) for externalizing problems. Moreover, youth who remained steady scored higher in self-efficacy (*M*= 0.70, *SD*= 0.74) and health status (*M*= 0.72, *SD*= 0.49) than youth who lost their holding steady classification (*M*=- 0.23, *SD*= 0.95) for self-efficacy and (*M*=- 0.12, *SD*= 0.91) for health status.

Regarding protective factors, mean comparisons revealed that youth who remained classified as holding steady scored significantly higher in verbal intelligence (*M*=8.55, *SD*=2.65), reported better relationships with their teachers (*M*=3.32, *SD*=0.58) and had more peers who engaged in prosocial activities (*M*=15.48, *SD*=2.53) than youth who lost their holding steady classification (*M*=7.65, *SD*=2.48 for verbal intelligence), (*M*=3.04, *SD*=0.83 for relationship with their teachers) and (*M*=14.33, *SD*=2.74 for prosocial peers).

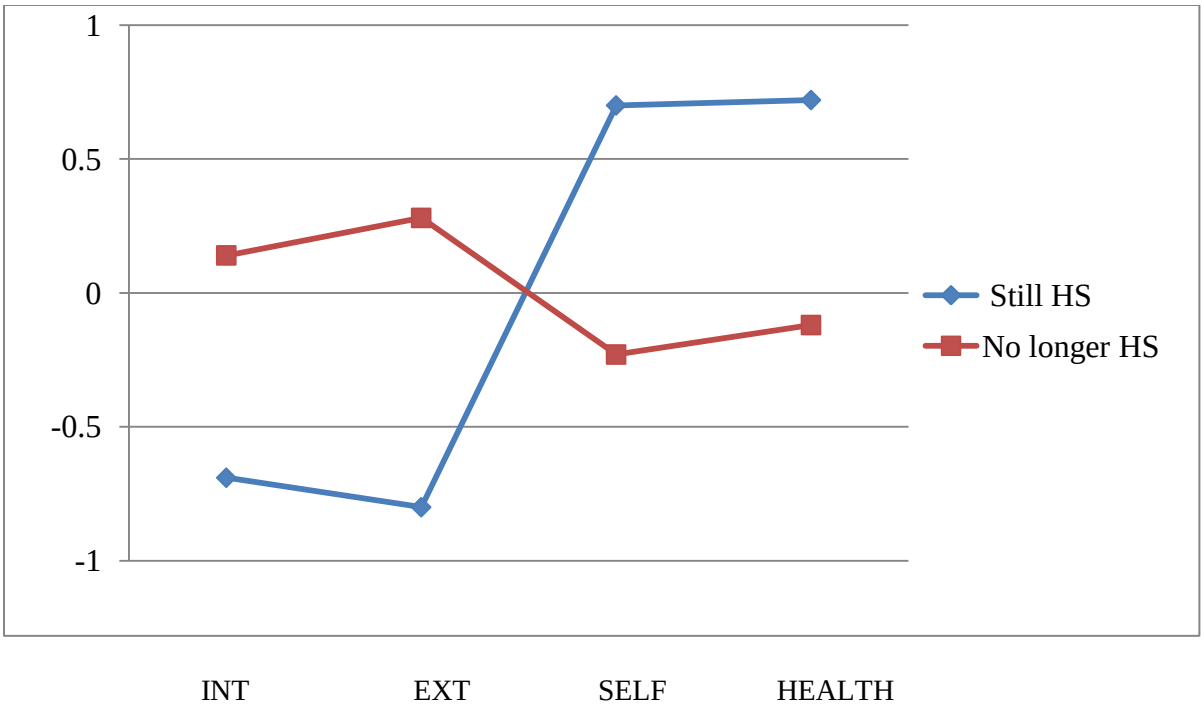

Figure 8. Comparison between youth who remained classified as holding steady vs. youth who lost their classification from wave 2 to wave 3 in domains of adjustment Chicago. INT = internalizing problems; EXT= externalizing problems; SELF= self-efficacy; HEALTH= health status. HS= holding steady.

Discussion

The increasing number of youth developing in ecologies characterized by adversity underscore the import role of resilience research for positive youth development. Resilience research calls for a better understanding of how the complex transactions between individuals and their contexts influence positive adaptation in the face of adversity, and how these adaptations remain stable or change over time. To date, most resilience research has been conducted in western societies emphasizing individual-and family-level factors, which constitutes an unfolding but incomplete body of research (Masten, 2013; Ungar, 2012). The present study explored the existence of profiles of adjustment among youth who have experienced some kind of adversity in three contexts: (1) Medellin, Colombia; (2) Guatemala;

and (3) Chicago, USA. The potential contributions of known protective factors to classification in any given profile of adjustment also were explored. Lastly, the continuity of profiles over time was examined in the Chicago sample.

Results showed that for each context, diverse profiles of adjustment emerge in the presence of adversity. In each context some youth were classified as either resilient or as holding steady (that is, demonstrating good, but not exceptional, adjustment), but profiles exhibiting high levels of internalizing symptoms, externalizing problems, or problems across domains also were identified. Protective factors at the individual and at the contextual levels proved relevant in predicting profile classifications, with some factors being salient in one context but not in others. Prospective analyses revealed both continuity and discontinuity in profile classification among youth in Chicago, with some youth remaining classified in the same group across time points, whereas others transitioned between groups. These results highlight the importance of studying resilience in context, given that what constitutes a salient protective factor for some youth may not be relevant for others. Moreover, these results show that as youth negotiate their developmental tasks within their ecologies, there is potential for both continuity and discontinuity in resilience processes. The results can inform prevention and intervention efforts aiming to work from a strength based approach.

The following is a more detailed discussion of the results presented in the light of the hypotheses and previous research. Limitations and implications of the study also are discussed.

Adjustment profiles

As hypothesized, different profiles of adjustment were identified among youth in the three contexts examined in this study, corroborating previous findings showing that individuals

can be categorized in subgroups on the basis of patterns of responses to the domains used to assess adjustment (Kliewer, Mejia, & Torres, 2015).

Similarities in the patterns of adjustment were observed across contexts. As mentioned before, a resilient or holding steady group emerged in each context, which corresponds with previous research where youth have been identified as displaying positive adjustment in the face of adversity (Betancourt et al., 2011; Masten, & Coatsworth, 1998). Additionally, a multiple problems group was identified in each context. These were adolescents who appear to struggle in each domain of adjustment defined for their particular environment; the co-occurrence of negative outcomes among youth living in high risk environments who are exposed to adversity has been widely reported (Bradley, Davis, Kaye, and Wingo, 2014; Conger & Donnellan, 2007).

Furthermore, as stated in my second hypothesis, some youth did exhibit good or exceptional adjustment in some domains while struggling in others. For instance, in the case of Medellin, adolescents in group 3 scored 2 *SD* below the mean in terms of internalizing problems, and under the criteria defined in this study they are considered resilient regarding internalizing symptoms. However, this group also scored 1*SD* above the mean in the engagement in violent behavior domain, this group was labeled as "Violent." This example corresponds to previous reports stating that individuals may appear resilient in some domains but not in others (McCormick, Kuo, & Masten, 2011). This is an important finding because it adds to the understanding that resilience is not a total attribute present across all domains (Brody et al., 2013). Thus, to call these youth resilient based solely in their absence of internalizing problems while ignoring their pattern of scores in other domains will constitute a mistake, and can prove misleading. For instance, it could be the case that the lower scores on the internalizing domains are not merely the reflection of absence of symptoms, but a potential indicator of desensitization

response. Indeed, emerging evidence suggests that among youth exposed to community violence an emotional desensitization response can be observed, such as after a certain point of exposure youth may become emotionally numb to the violence experienced in their environments, which in turn can weaken the association between ECV and internalizing symptoms (Kennedy & Ceballo, 2016). Hence, it could be the case that youth in the Medellin sample who appear "resilient" in the internalizing domain while acting violently are actually emotionally desensitized to their adverse experience.

In addition to groups demonstrating resilience, good but not exceptional adjustment, and multiple problems, the analyses revealed outlier groups in both Medellin and Guatemala. In Medellin an outlier group demonstrated excessive problem behavior; in Guatemala the outlier group was extremely violent. Although they constituted a small proportion of the samples (around 4%) they appear to be qualifiers of the intensity of problems observed among these group of at-risk youth. That is, youth classified in the extreme groups presented similar problems to youth in other groups (e.g. violent) but at a higher level, or in addition to other issues. This has important implications in terms of tailoring prevention and interventions efforts, and constitutes one of the advantages of a profile approach to identifying patterns of adjustment. If merged together, youth from these groups will form a group that does not accurately represent their profiles (either underestimating their violent responses, or over representing them); as a consequence, programs designed to serve them under an inaccurate representation of their needs will be likely to fall short in their efforts.

It is noteworthy that a similar type of outlier group was not evident in the Chicago sample. This could be due to the fact that a direct measurement of engagement in violent behavior was not included as an indicator of adjustment. However a measurement of

externalizing problems was used and an outlier group could have emerged. It could also be the case that at the time of the study, more opportunities for engagement in violent behavior were available in the Medellin and Guatemala contexts, or it could be that outlier groups do not represent the profiles of adjustment in the Chicago sample.

Lastly, in addition to differences in the number of profiles identified for each context, differences in the proportion of youth classified in some groups were evident. For example, a higher proportion of youth were classified as holding steady in Guatemala (66%) and Chicago at wave 2(52%), than in Medellin or Chicago at wave 3. The higher proportion of youth classified as holding steady in Guatemala and Chicago at wave 2 adds empirical evidence to the claim that resilience constitutes a somewhat normative response to adversity (Masten, 2001; Ungar, 2013). However, this was not the case for the Medellin sample where youth classified in the resilient group accounted for only 25% of the sample, nor for Chicago youth at wave 3 where only 32% of youth were classified as holding steady. This shows that although resilience may constitute a normative response, diversity may be observed across cultural contexts and even across time within the same context.

Predictive Effect of Covariates and Protective Factors

As hypothesized, the effect of protective factors did vary across profiles of adjustment, and across the three contexts examined. For example, a personal belief in God appeared to be a salient protective factor for youth in Medellin and Guatemala but not for youth in Chicago. Youth with higher levels of a personal belief in God were more likely to be classified as either resilient or holding steady over multiple problems and/or the excessive problems group. These findings correspond with previous reports regarding the salient role of religious beliefs as a protective factor among Latin American youth (Kliewer, Mejia, & Torres, 2015; Kliewer &

Murrelle, 2007). Similarly, family cohesion and a positive relationship with teachers emerged as salient protective factors for youth in Medellin and Guatemala but not for youth in Chicago. Overall, higher levels of family cohesion predicted classification in the resilient or holding steady groups over classification in any other group. This finding corresponds with previous reports regarding the key role of family dynamics for youth adjustment (Biglan et al., 2012; Masten, Obradovic, 2006;)

A positive relationship with teachers, although relevant for youth in Medellin, seemed to play a more central role for youth in Guatemala. This finding is important because it constitutes an example of the differential role that known protective factors may play in diverse cultural contexts (Ungar et al., 2007). Although a positive relationship was not a relevant predictor of profile classification for youth in the Chicago sample, this may be explained by the fact that the indicators of positive adjustment chosen for the Chicago sample did not include a school related domain. Indeed, Cicchetti (2010) explained that when studying factors that help youth to navigate challenging and complex contexts, one must consider that some factors may be more critical for certain outcomes.

For youth in the Chicago sample, protective factors from the individual and peer domain seemed more relevant for profile classification than protective factors related to the family or school environment. Higher intelligence scores in particular predicted classification in the holding steady group over other groups at both wave 2 and wave 3, which corresponds with reports of intelligence functioning as an important facilitator of resilience (Ghazinour, and Richter, 2013; Masten, 2001) . At wave 3 only, the number of peers engaged in prosocial behavior predicted membership in the holding steady group over membership in the poor health and problem behavior groups. This also correspond with reports of the important role that

prosocial peers play in positive adjustment among youth (Choukas-Bradley et al., 2015; Jain et al., 2012). Perhaps the fact that this association was not evident at wave 2 reflects the gradual transition from family oriented relations to peer oriented relations during adolescence (Giordanno, 2003; Grusec & Hastings, 2007). It is possible that youth at wave 2 were still developing their peer relations making peer influence less prevalent, and / or youth knowledge about their peers somewhat superficial. Along these lines, Masten (2014) states that when exploring the effects of protective factors, developmental timing must be considered, since the buffering role of protective factors may differ depending of the time of exposure. This is important when considering windows of opportunity for prevention and intervention efforts, where the optimal use of relevant resources is vital.

Other effects show that protective factors consistently favored classification in the holding steady group over the other groups. For instance, support from others favored classification in the holding steady group over the depressed disengaged group in the Guatemala sample; whereas participation in meaningful activities favored classification in the holding steady group over the poor health group in the Chicago sample at wave 2. These effects, although not prevalent across group comparisons, nor consistent over time, are still meaningful since they provide empirical evidence of the role of protective factors in positive youth adjustment living in high risk contexts. For example, it has been reported that participation in meaningful activities creates opportunities for acknowledgement and achievement, thus promoting resilience through the development of confidence and positive self identity (Brooks & Goldstein, 2001, Werner, 2013); the present study provides evidence that that may be the case for some youth in the Chicago sample who avoided classification in the poor health group.

Differential susceptibility to protective factors must be considered. It is known that the different ways in which individuals interact with risk and protective factors at each level of their ecologies allows for diversity in their patterns of adaptation (Luthar, 2006; Masten & Coatsworth, 1998). Certainly, factors that lead to resilience / positive adjustment for a group of individuals may not be relevant for another (Grotberg, 1995). Differential susceptibility to environmental influences has been described by Belsky, Bakermans-Kranenburg, and van Ijzendoorn (2007), who explained that individual differences can be observed in the susceptibility to detrimental environments and also in responses to beneficial environments. Moreover, it may be the case that the presence of risk factors may limit adolescents ability to benefit from protective resources available to them (Theron, Liebenberg, & Ungar, 2015; Ungar, 2012).

In sum, the predictive role of protective factors for classification in different profiles of adjustment was observed across contexts. These findings are important because they provide evidence that different contexts offer varied processes to promote resilience (Ungar, Ghazinour, and Richter , 2013) and that relevant protective factors arise from both the individual and contextual levels.

Lastly, regarding the role of sex, age and race/ethnicity in the prediction of class classification, only sex and age appeared relevant for profile classification. This was the case in the Medellin and Guatemala samples but not in the Chicago sample. Females appeared more likely to be classified as resilient or holding steady than to be classified as violent or presenting multiple problems. They also seemed more likely to be classified in the high internalizing group over the violent, multiple problems or excessive problems groups in Medellin and more likely to be classified in the depressed disengaged group than in the violent or multiple problems in

Guatemala. The fact that no sex differences were observed in the USA sample may relate to potential differences in gender socialization across the cultures. For instance the degree to which females engagement in violent behavior is censored may be higher in the Latin American samples (Medellin and Guatemala). The effect of age was evident in the Guatemala sample with older group being more likely to be classified in the excessive violent and violent groups than in the holding steady group; and with older youth being more likely to be classified in the excessive problem group than in the resilient group in the Medellin sample. It may be the case that older youth had more opportunities to engage in violent behavior and perhaps less parental supervision than their younger counterparts. For the Chicago sample, the effect of age was relevant only at wave 3, with older youth being more likely to be classified in the poor health group than in the holding steady group.

Longitudinal Contributions of Protective Factors

Longitudinal analyses with the Chicago sample revealed that both individual and contextual factors are relevant for the prospective prediction of group membership. Intelligence and engagement in prosocial activities at wave 2 favored classification in the holding steady group over classification in the poor health group as well as membership in the problem behavior over the poor health group at wave 3. These results revealed that youth classified in the poor health group had less participation in meaningful activities and scored the lowest in the intelligence tests at wave 3.

Regarding protective factors at the contextual level, youth who got along better with their teachers at wave 2 and who reported a higher number of number of peers engaged in prosocial activities at wave 3, were more likely to be classified into the holding steady group over the problem behavior group at wave 3.

Given that protective factors are interdependent and interrelated, and that the presence of a number of them can favor performance in multiple domains of adjustment (Alvord, Rich, & Berghorst, 2016), it is possible that intelligence and verbal ability enhance social competence which in turn facilitates individual ability to get along with others (e.g. peers and teachers). It is known that a supportive teacher–student relationship contributes to lower risk behavior among youth (Cornell, Dewey; Huang, & Francis, 2016). Social skills are also related with success in the school setting (Eccles & Barber, 1999) thus, youth with high verbal ability may be able to take advantages of resources available to them that ultimately help them to successfully navigate the challenges presented by their ecologies. On the other hand, youth whom lack on one protective factor may struggle to profit from others, this could be the case for the youth in the poor health group, who could benefit from increased participation in meaningful activities, that as explained before, had the potential to provide opportunities for acknowledgement, achievement, and development of confidence and positive self identity (Brooks & Goldstein, 2001, Werner, 2013).

Although many studies have reviewed the role of protective factors in the prediction of developmental outcomes (Chen, Howard, & Brooks –Gunn, 2011; Francois, Overstreet, & Cunningham, 2012; McHale et al., 2012; Sampson, Morenoff, & Gannon –Rowley, 2002) there is a lack of studies exploring the predictive role of protective factors for the classification in any given profile of adjustment. These results contribute to fill that gap by providing evidence of the prospective role of individual and contextual factors for youth classification in diverse profiles of adjustment.

Transition Analyses

Prospective analyses with the Chicago sample revealed continuity and discontinuity in profiles classification from wave 2 to wave 3. Although the profiles identified at wave 2 (poor health, problem behavior, multiple problems and holding steady) reemerged at wave 3, when considering the stability of class membership over time, a variety of transitions were observed, with youth being classified into both "better" and "worse" classes at the subsequent wave. Thus, as hypothesized, some youth retained their initial classification, while others transitioned between groups.

Overall, more stability was observed in patterns of "poor adjustment" with more movement observed in the holding steady group, where 26% of youth initially classified as holding steady moved to a problem group. These results are important, since they add evidence To the dynamic nature of resilience and positive adjustment (O'Dougherty, Wright, & Masten, 2013). Sroufe, Egeland, Carlson, and Collins, (2005) explain how resilience, rather than a personal trait, is a feature of a developmental system that can be observed over time. This is also what Sroufe et al. (2005) mark as the differentiation between competence and resilience; competence is a piece of functioning at a particular time, while resilience involves a developmental process over time. Likewise, Panter-Brick, and Leckman (2013) also highlighted how resilience is a process that unfolds over the course of development, and according to the authors, issues of timing, processes and context are fundamental for resilience research.

Regarding protective factors, once again, intelligence, good relationships with teachers, and more peers who engaged in prosocial activities were higher among youth who remained classified as holding steady. Scholars state that the success or failure in a given developmental task can set an individual on either a positive or a negative developmental pathway (McCormick,

Kuo, & Masten, 2011; Masten & Cicchetti, 2010). Thus, it could be the case that in the time elapsed between wave 1 and wave 2 youth who lost their status as holding steady struggled to effectively negotiate the demands in their environments and capitalize on their resources.

It is noteworthy that more girls than boys lost their status as holding steady, increasing in scores of internalizing and externalizing behaviors and decreasing in their levels of self efficacy and health status. Masten (2013) explains how some risk factors may be related to characteristics of the individual (e.g. sex); it may be the case that girls are more susceptible to contextual factors, that boys exceeded girls in their ability to cope with the demands of the environment, or that boys desensitize to their ecology of risk (Bergman, Magnusson, & El-Khouri, 2003). Further research is needed to explore potential sex differences in the continuity and discontinuity of profiles of adjustment.

The importance of understanding developmental pathways that lead to positive youth development in the context of adversity has been strongly emphasized in prevention, developmental, and resilience research (O'Dougherty, Wright, & Masten, 2013). Likewise, Masten and Obradovic (2006), highlighted the importance of assessing ongoing competence, understood as meeting and continuing to meet developmental tasks relevant for a particular socio cultural and historical context. The present study constitutes an example of assessing ongoing adjustment; the prospective piece here shows stability in the profiles identified at wave2 and wave 3, and also illustrates the continuity and discontinuity in the individual's patterns of adjustment. Lastly, it is important to consider the changing ecology of human development as not only are adolescents changing, but the environments where they live may also change. It is possible that youth who lost their status as holding steady experienced significant changes in the resources available to them and/or in the risk factors threatening their adjustment. Under this

logic, one may wonder what is next for these youth as they transition into adulthood and new developmental tasks are encountered, and understanding protective processes that may favor continuity of positive adjustment is key for resilience research.

Limitations and Future Research

There were several limitations to the present study. The first is common to all studies relying on secondary data analyses. I was limited by the measurements available for each context. The parent studies were not designed with the primary goal of assessing strengths or positive development, thus when searching for "positive" criteria to define resilience I needed to compromise. This, however, is not an issue exclusive to this study. In fact, throughout the history of resilience research the quest for a comprehensive definition of resilience has engaged researchers and practitioners in lasting debates. Criticisms regarding potential bias when determining the criteria for the judgments of adversity and positive adaptation have been documented (Masten, 2013). The present study faced some of these common problems in the field. The inferential approach used to determine positive adaptation relied mostly on the absence of symptoms, rather than in the presence of strengths. This is unfortunate, given that the goal of the present study was to identify indicators of positive adjustment (success in developmental tasks, relational competence, subjective well-being) rather than absence of psychopathology. The use of "positive" indicators was only partially possible in the Chicago data set. This, however is not an uncommon practice, and to date, a wide range of approaches to the operationalization of resilience, and how to measure successful adaptation, persists (Alvord, Rich, & Berghorst, 2016).

A second limitation relates to the lack of measurements available for a comprehensive analyses of protective factors at more distal levels of influence in the ecologies here studied. Certainly, taking into account the contribution of factors at the macro level adds to the already

complex task of studying individual development; and it is not uncommon that the direct study of the influence of the context of the individual gets neglected in developmental research (Little, Bovaird, & Card, 2007; Wachs, 2000). This is unfortunate for the study of resilience, since the focus of interest is "at risk" individuals, and risk permeates throughout all layers of influences. It would be interesting for future studies to address this issue.

Similarly, measurements regarding individuals' physical health and/or their biological domain were not available. Given the reciprocal relationship between biological and psychological processes, it would be important that in addition to psychosocial variables to also include biological variables. If we truly want to address resilience in context and from a biopsychosocial approach, it is important to include measurements for all domains, not just cognitive, academic, and socio-emotional. This may require a multidisciplinary approach to the study of resilience, multidisciplinary approaches to the study of human development and adaptation are not new (see Brody et al., 2013 for an example) and most studies should follow this lead.

Lastly, more research is needed looking at diversity in profiles of adjustments in diverse cultural contexts (Theron et al., 2015) and analyzing the continuity and discontinuity of said profiles while accounting for relevant risk and protective factors within each context. It will be particularly interesting to explore said processes in world regions with growing populations of youth facing adversity (e.g. Asia, South Africa; Diers, 2013).

Implications

The present study contributes to a global perspective in the study of resilience by including three different contexts: Medellin, Colombia, Guatemala and Chicago, USA. Commonalities and differences were identified. The results address gaps in the resilience

literature in three important ways: (a) Few empirical studies have focused on identifying different profiles of adjustment among youth exposed to adversity and risk. The present study provided empirical evidence to the existence of a variety of adjustment profiles. (b) Little is known about which protective factors are most important in facilitating resilient outcomes for youth in diverse cultural contexts. The present study identified salient protective factors for each of the contexts analyzed: Medellin, Colombia, Guatemala and Chicago, USA. Furthermore, the present study considered protective factors at proximal and distal levels of youths' ecology. (c) To my knowledge, the present study is among the first to explore change over time and transitions in profiles of adjustment among youth exposed to adversity and risk, identifying both continuity and discontinuity in adjustment.

These results have important implications for research and practice. As mentioned before, future research should give more attention to issues of design and measurement in order to attend to both proximal and distal factors of influence on development and adjustment; and include measurements of adjustment and not just of lack of problems. Prospective analyses are critical in order to understand how resilience develops, how it is maintained and how it changes as individuals transition through life. Next, it is important for practitioners to actively promote - and not just understand and explain -positive youth development. Resilience and developmental research can inform prevention and intervention efforts. These efforts do not occur in isolation of the ecologies that place youth at risk in the first place. Nurturing environments are key to create a society that fosters positive youth development. Improving larger societal systems to help families, schools and communities become more nurturing constitutes an urgent line of inquiry for all of us interested in promoting positive youth development. Currently, interventions targeting the promotion of resilience are already in place (Barret, Cooper, & Gallegos Guajardo,

2014, Brown et al., 2010) and ongoing evaluations contribute to the understanding of resilience processes and to the formulation of new questions. This cycle of research informed practice and practice informed research is key in order to promote research that is useful for promoting the social changes badly needed to guarantee positive youth development for youth facing adversity.

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Vita

Alicia Borre was born on April 30, 1979, in Bucaramanga, Colombia. She graduated from National University in Bogota, Colombia in 2002 with a BA in psychology. She worked as resident psychologist in Bogota while gaining experience in prevention and intervention programs with at-risk families and youth. She later became part of an interdisciplinary team working to coordinate efforts in order to provide permanent homes for children living in orphanages and foster care. In August 2012 she earned her MS in Applied Developmental Psychology from George Mason University. She joined Virginia Commonwealth University in the fall of 2012 as a developmental psychology doctoral student. Her research interests focus primarily on understanding the different ways in which individual and contextual factors contribute to the well-being and adjustment of underserved families, children, and youth. Specifically, she is interested in promoting positive youth development through the strengthening of family, school, and community environments as well as through the promotion of resilience processes. She currently works as an assistant professor in the psychology department at Hampton University, Hampton, VA.